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CHRONIC BRIGHT'S DISEASE (ARTERIO-CAPILLARY FIBROSIS) IN ITS RELATIONS TO INSANITY.

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Efforts to frame a satisfactory etiological classification of mental disease have been materially helped by a resort to a clinical grouping of cases. It has been recognized that where a wide variation exists in the causes assigned for the production of insanity in any given series of cases, among certain of them "groups of symptoms" are manifested which point to a definite constantly acting cause. "In many instances we know absolutely that such a cause exists. Even if we do not know that a specific cause is antecedent to the development of a certain form of disease, we are justified in inferring, where symptoms are identical, an identity of cause."[1] Acting upon this theory, it has been possible to frame a rational classification or "clinical grouping" that has simplified much that has hitherto been unsatisfactory and obscure. In spite, however, of the material assistance thus afforded, the lack of a definite pathological basis for perverted mental operations has been keenly felt by alienists.

That constitutional disease has been a comprehensive factor in the production of insanity has long been recognized. Many cases of mental disease manifesting similar symptoms, have fallen naturally into such a group. If it were possible to connect certain of these cases with a more definite pathological process, a step would undoubtedly be made towards simplifying our knowledge of the subject. We are led to believe from clinical observations, and from an interpretation of recent pathological researches in Bright's disease, that we may arrive at a material pathological basis in the classification and treatment of many cases of insanity which have hitherto been set down, rather vaguely, to disturbances of nutrition. When properly understood, it seems likely that such a group may be made to include not only many that have already been classed under constitutional disease, but also many cases of the rheumatic, choreic and climacteric groups, as well as a goodly proportion of senile cases. The group under consideration will be found to include many suffering from alienation or impairment of mental faculties who have not possessed an especially unstable mental organization, nor an inherited tendency to mental disease. They may present simply a weakening of the faculties, or more violent perturbation, with controlling delusions systematized or unsystematized.

In the last annual report of the Government Hospital for the Insane at Washington, Dr. I. W. Blackburn, Special Pathologist for the Institution, presents in tabulated form the results of an examination of the kidneys in 263 cases of mental disease. Disregarding 104 cases, in which there was unmistakable increase of connective tissue, regarded by the author as "unimportant," we find 43 cases "in which the deviation from the normal was sufficient to constitute disease, including cases of *senile atrophy* of pathological degree." For present purposes the results are of little importance, in the absence of anything like a clinical history of the cases. Reference is made to them merely to call attention to the relative frequency with which Bright's disease occurs in insanity, either as an exciting cause, or as an accidental complication. Nearly one-sixth of his autopsies presented alterations "sufficient to constitute disease." It is reasonable to suppose that a respectable proportion of this one-sixth were cases in which the mental disease bore more than an accidental relation to the disease of the kidneys.

Out of a total of upwards of twenty-six hundred admissions to the Eastern Michigan Asylum, 37 cases have been collected in which the appearance of grave disturbances of nutrition have been co-incident with the discovery of albumin and tube casts in the urine. In only about a dozen of these cases could it be said that the mental manifestations were not dependent upon or modified to some extent by the renal disorder. The intimacy of this connection can be better estimated when we come to consider the different ways in which the association may manifest

[1] Report of Eastern Michigan Asylum, 1882.

itself. The little that seems to have been written on the subject justifies the belief that the importance of the relation between Bright's disease and insanity has not been fully appreciated. Those articles which have come to the writer's notice have not embraced in their treatment of the subject the full extent of the connection between the two pathological processes. It has been treated as if mental disturbance could occur only as a uro-toxic consequence of impaired functional activity of the kidneys; losing sight of those cases in which both conditions may be regarded as an expression of a more widely diffused morbid process. If insanity with Bright's disease occurred only as a uræmic condition the rarity of such conditions would justify the little consideration that has been bestowed upon the subject.

The most recent ideas respecting the nature of Bright's disease, render it easy for us to accept the notion of an affection which rivals syphilis in the multiplicity of its manifestations, acting as an efficient factor in the production of insanity. Regarded as one of the symptoms of the constitutional affection, the mental derangement is as easily accepted as the persistent vomiting, the diarrhœa, or the rarer complications, like chorea and other purely nervous disturbances, mentioned by recognized authorities as occurring in this disease, more especially in the cirrhotic form.

Although pathologists are not agreed as to the seat of the primary lesion in chronic Bright's disease, it is no longer regarded as existing altogether in the renal structure. A brief review of the evolution of present accepted theories concerning its pathology, will help us, I think, in arriving at an understanding of the extent of the relation which may exist between this affection and many cases of mental derangement. Within the past year two contributions to the subject of chronic Bright's disease have appeared which must command attention, not only on account of the prominence of the authors, but also because of the advanced theories presented therein, founded as they are upon original pathological research. The first of these was the Middleton Goldsmith lecture delivered April 18, 1888, by Dr. J. M. Da Costa, on "The Relation of the Diseases of the Kidney, especially the Bright's Diseases, to Diseases of the Heart." The other was a paper read before the College of Physicians in Philadelphia, in June, 1888, by Dr. Arthur V. Meigs, entitled "A Study of the Arteries and Veins in Bright's Disease."

The recognition of increased arterial tension with hypertrophy of the left ventricle was the first fact which tended to place the subject upon a more definite pathological foundation. To account for these vascular changes different theories were advanced, summarized by Dr. Da Costa as follows:

The first view held that renal excrementitious matter stimulates the action of the heart, leading to its hypertrophy, and that impure blood requires greater force of ventricular contraction to force it through unwilling vessels. This was the view of Bright. A second view (Traube) took account of impurities in the blood, but located the obstruction to the flow, in the vessels of the kidney. A third view (Johnson) suggested that the arterioles refuse to receive altered blood, and that in consequence of their resistance, the *muscular* coats hypertrophy, with consequent hypertrophy of the heart. A fourth explanation asserted a fibroid over-growth of the *outer coats*. While any one or all of these were sufficient to account for the hypertrophy of the heart, they were only suggestive of the probable nature of the disease. When next it was observed that in many cases there was clinical evidence that disease of the heart had preceded the detection of the disease of the kidney, it was thought that congestion of certain internal organs, especially of the kidneys, was dependent upon the former trouble. Finally the demonstration by Gull and Sutton, in 1877, that many cases which had previously been called Bright's disease of the kidney, were, in fact, "due solely to changes having their origin in the arterioles and capillaries, and in the connective tissue in which they lie," led to the abandonment of the idea that the diseased process was a disease of the *kidney*.

The present state of knowledge of chronic Bright's disease is summarized by Dr. Meigs as follows: 1, In cases of albuminuria certain changes take place in the kidney, with which there is commonly associated enlargement of the heart, and sometimes atheroma of the arteries; 2, other changes of a degenerative and atrophic type are found in various organs and tissues of the body, namely, diseases of the cerebral arteries and of the arteries and substance of the spinal cord—described by Gull and Sutton in their paper on "Changes in the Spinal Cord and its Vessels in Arterio-Capillary Fibrosis"—emphysema and slow inflammatory processes in the lung, changes in the heart valves, degeneration of the coronary arteries and of the muscular tissue of the heart, diseases of the liver and the spleen. To account for such wide-spread changes, two schools have arisen; one assuming that the disorder is primarily a blood disease manifesting itself first in alterations in the secreting surface of the kidney; the other maintaining that it has its origin in the adventitia of the arterioles and in the capillaries and perivascular connective tissue.

The late Dr. Fothergill, in his work "Vaso-Renal Change vs. Bright's Disease," attempted to harmonize these views by elaborating a theory of *atavism*, or a reversion to the uric acid formation of lower forms of life, by virtue of which the solubility, and hence, the elimination of excre-

mentitious products, are interfered with. The irritation due to continuous circulation of such toxic matter in the blood results in hyperplasia of the vascular coats, weakening of their walls, and narrowing of the caliber of the vessels.

Influenced by the belief that the pathological process was primarily in the vascular system, Dr. Meigs made an examination of the veins and arteries in a number of cases presenting the complexus of symptoms known as chronic Bright's disease. As a result of his investigations he finds himself able to predict with considerable accuracy that, in addition to the well-known lesions of the heart and kidneys, he will find after death other widely diffused changes. In sections for the microscope from almost every organ, including the brain and spinal cord, he has found an irregular over-growth and thickening of the *intima* of the *arterioles*. He has come to attach little importance to signs which are usually relied upon, almost to the exclusion of everything else, to establish the diagnosis. While the presence in the urine of albumin with casts is positive evidence of the disease, the absence of one or the other does not negative the diagnosis. In one of his cases, in which aortic regurgitation had made its appearance late in life as the result of calcification of the valves, death came on gradually in consequence of heart failure, without dropsy or other symptoms pointing to an involvement of the kidneys, except a trace of albumin without casts when the patient first came under treatment. Microscopical examination after death revealed atheromatous and fibroid alterations in the vessels, and parenchymatous changes in the kidney, with casts in the tubules. He cites also another case in which the autopsy verified the diagnosis, where casts were never found in the urine, although albumin was constantly present.

Da Costa, in his paper referred to above, analyses 127 cases of valvular disease of the heart, and finds among them only eight cases in which any true affection of the kidney followed the disease of the heart—not one of true contracted kidney—from which he concludes that valvular disease of the heart rarely leads to chronic disease of the kidney. On the other hand, from an analysis of 121 cases of renal disease with concurrent heart disease, it becomes apparent that the character of the kidney affection in the vast majority of cases is that of the contracted kidney. He concludes that "the ordinary valvular affections in the Bright's diseases are the result of the altered tissue-nutrition of the valves, and of the degenerative changes which take place there, as they take place in the large and small vessels of the body. They are favored to a greater or less degree by the morbid products which, from want of proper elimination on the part of the kidneys, circulate in the blood. It may also be a question whether, in part at least, the altered nutrition of the valves may not be due to affections of their nervous supply." He goes on to say that while degenerative changes are favored by age, yet age is not the important factor it appears at first sight to be. He has been led to his conclusions by the results of investigations into the condition of the ganglionic nervous system. He has found changes in the cells of a degenerative character sufficient, in his opinion, to account for the vascular changes and for the cardiac hypertrophy. He also admits, with Meigs, thickening of the *intima*, but the primary pathological condition he believes to be in the wasting of the cells of the sympathetic ganglia. This theory, I believe, finds clinical support in those cases in which a patient in his usual health is suddenly overwhelmed by a fatal œdema of the lungs, a rational explanation for which lies in vaso-motor paralysis.

Here, then we have a picture of a disease so generally diffused, that no organ of the body may be said to be exempt from sharing to a greater or less extent in the derangement which may be set up. I am aware that more positive evidence in the form of microscopical examination of the brain substance is necessary to establish the conclusions which I would draw. It should be borne in mind, however, that it is with precisely such cases as we are now dealing that this evidence is most likely to be lacking. Many of them are cases in which the mental disorder has been regarded as a functional disturbance, and whose symptoms are least suggestive of histological changes, and hence, least likely to stimulate to such investigations. It would seem, also, that mental manifestations would be limited to that form of Bright's disease treated of especially by Meigs and Da Costa; but we are little concerned with the nomenclature of Bright's disease, if, as Millard says, "all inflammatory conditions of the kidney arise as a matter of course from the vascular apparatus of the connective tissue."

The same sets of causes commonly recognized as productive of insanity in general, are no less efficient when acting through the medium of such an affection. Dr. Tyson speaks of "mental anxiety, whether the result of grief or of business and financial cares," as among the possible causes in the production of Bright's disease. All authors recognize prolonged mental tension, of whatever kind, as a frequent cause. Adding to this the gradual development of structural changes, whether as an "arterio-capillary fibrosis," or as an increase of connective tissue in the kidney interfering with the elimination of deleterious matter or as both combined, the subsequent appearance of altered mental phenomena is understood with little difficulty, and all the more readily, if we can accept Da Costa's theory of the disease originating in a starvation of the cells of the sympathetic ganglia.

Cases of insanity dependent upon Bright's disease arrange themselves quite naturally into two classes: the uro-toxic, and the vascular, according as the one or the other set of symptoms predominates. The disease is, of course, the same, and the different sets of symptoms may at different times present themselves in the same individual; and, as Meigs has so plainly shown, death may ensue from causes apparently widely diverse, and yet identical lesions be found after death. In the former class are included not only those undoubted cases of uræmic insanity in which the symptoms are of the nature of delirium, the result of blood-poisoning, but also those cases in which the mental perturbation is as much the result of a lowered state of bodily nutrition as of the direct action of poisonous matters upon the nervous centres.

Genuine cases of uræmic insanity have been met with infrequently. The following illustrative case is reproduced from the last biennial report of the Eastern Michigan Asylum. The patient was a female, æt. 34; mother died of consumption; otherwise, family history good. There was no inherited tendency to mental trouble. Patient had puerperal convulsions attending a miscarriage three years previously. She is said to have been insane for some time following. A second attack, also puerperal in causation, occurred two years later. The present attack, likewise puerperal, was of two months' duration prior to admission. During the entire interval between the first and last attacks there was a history of grave dyspeptic disorders, associated with failing vision. Previous to her transfer from home she is said to have been occasionally maniacal, though for the most part confused and restless. At the time of her admission she was greatly reduced physically, and her pulse was rapid and feeble. There was a peculiar tremor about the lips while speaking, and her articulation was indistinct. Her mind was bewildered and her conversation wandering. She had little appreciation of her surroundings. Her urine contained many casts, with much renal *débris*, and albumin was present in considerable amount. Mental disturbance was of the character of delirium. There were extreme restlessness, picking at the bed-clothes, and low, muttering conversation, but never any maniacal manifestations. She took food poorly, and rapidly exhausted. She died semi-comatose less than a month after her admission to the Asylum. She was not able to express herself coherently at any time during her stay in the institution."

Symptoms attributable to uræmia may appear in the progress of other cases where the earlier mental manifestations point rather to a disturbance of the general nutrition of the patient. A clergyman, a gentleman of intelligence, who was suffering from melancholia of a suicidal type, had broken down in his work, partly in consequence of continued ill health; partly as a result of natural pecularities which unfitted him for his calling. For over a year previous to his admission to the Asylum he had been a confirmed invalid, suffering from dyspeptic troubles, headache, frequent vomiting, periodical attacks of eczema, etc. From being merely hypochondriacal, emotional and despondent, he came to entertain active delusions, first, of suspicion respecting his friends, eventually, of personal unworthiness. In spite of a nourishing diet, a quiet mode of life, and remedies directed to restoring his strength, the patient went steadily from bad to worse. Physical prostration progressed out of all proportion to variations of weight, and of force of the circulation. Hallucinations of vision and of hearing came in to intensify his delusions and to make his condition more pitiable. These systematized delusions gave place finally to a low delirium, with complete incoherence of ideas. With all this there were intense excitability of the motor centres, grinding of the teeth, jactitation, and increase of the visual and auditory hallucinations. Towards the close, spasms of all the voluntary muscles recurred frequently. Except that these attacks were not attended by a condition of insensibility, they did not appear to differ much from an ordinary convulsive seizure. He finally passed into a state of unconsciousness in which he died, four months after his admission. His urine, during his stay in the asylum, presented no marked deviations from the normal, either in the amount excreted, or in the specific gravity. Albumin was present in small amount. Hyaline and granular casts and cells in a state of granular degeneration were present in abundance. The patient never had any paralysis nor localized convulsion, nor any symptom pointing to a focal brain lesion. Œdema was never present. Unfortunately, an autopsy was not practicable.

It may not be out of place, to recall here, that the amount of urea found by quantitative estimation to be excreted in twenty-four hours may not be a reliable indication of the presence or absence of uræmia. The daily excretion of urea we know to vary widely, not only in different individuals, but in the same individual, and this variation may be within the limits of perfect safety. On the other hand, we can understand how life may be gravely threatened by all the dangers of uræmia when the amount of urea excreted is found to be nearly or quite up to the standard fixed as normal. The kidneys do their work well up to a certain point, removing all the waste products, except a certain small amount which is left over as a residuum, to be added to daily by small increments. Gradually the point is reached at which these matters cannot circulate in the blood without manifesting their presence; or it may be that after an unusual inges-

tion of nitrogenized food, or an unaccustomed amount of exercise, or both together, the system becomes suddenly overwhelmed. It is obvious that the kidneys of such a person will be least likely to present gross structural changes.

In the following case there can be no reasonable doubt of the dependence of the mental disorder upon the renal disease, or of death resulting from uræmia: A retired capitalist, 81 years of age, well preserved, of temperate habits, and without inherited taint, began to fail in mind eighteen months prior to his admission to the asylum. He became restless, irritable towards members of his family, and unwilling to remain at home. At first he had delusions of extravagance. To these there succeeded, later, periods of noisy excitement lasting for several days, during which he feared robbery and personal injury. Chronic Bright's disease had been diagnosticated by his medical attendant a year previous to his coming to the asylum. At the time of his admission he weighed in the neighborhood of 200 pounds. There was no evidence of arterial degeneration, but his pulse was full and slow, and the left ventricle was manifestly hypertrophied. His pupils were contracted, and the urine contained albumin and casts. His delusions gradually lost form and were replaced by confusion of ideas. Later, recurring attacks of vomiting were followed by loss of appetite and flesh. Attacks of dyspnœa occurred occasionally, sometimes attended with expectoration of blood. Slight pitting of the ankles occurred towards the last. This patient finally died in a coma, which persisted through five days.

More frequently the mental symptoms do not suggest uræmic intoxication as much as a general lowering of the nutritive processes. The brain, with other organs, feels the lack of a healthy blood supply. Such cases are apt to accompany or follow a train of dyspeptic symptoms. The patients become low-spirited; sustained mental effort and the pursuit of the ordinary avocations are impossible; the mind dwells upon the bodily symptoms, and confirmed hypochondriasis results. If delusions develop, they are usually confined to groundless ideas of suspicion of friends, or to ideas of personal unworthiness.

As illustrative of chronic Bright's disease associated with this type of mental trouble, the following cases are reproduced from the last biennial report of the Eastern Michigan Asylum: A male, æt. 45; no hereditary tendency to mental disease; had been a temperate man, but there was a history of dyspeptic troubles dating back many years. During the fall preceding his admission he had become peculiar, forgetful and confused. Later, he was nervous and hypochondriacal, and in the winter developed religious delusions, associated with ideas of a self-condemnatory character, and became suspicious of the different members of his family. He was finally brought to the asylum, partly in accordance with his own wishes, with some appreciation of his condition. He had complained of failing vision for two months. Upon admission he seemed reduced physically. Pulse 102, and weak. He continued despondent and hypochondriacal, and was at times distressed by his delusions. Casts and albumin were present in his urine from the first. On several occasions he experienced seizures which were regarded as of uræmic origin; complained also of seeing balls of fire. After one of his seizures his attendants thought he was dead, and resorted to artificial respiration to restore him. He remained confused and more or less insensible to his surroundings during the rest of the day, and on recovery, articulation was noticed to be very indistinct. Bed-sores developed, and towards the last suppression of urine occurred. Diarrhœa was a troublesome feature. He died semi-comatose four months after admission.

A female, æt. 57. Family history good. Patient was naturally of active habits, cheerful and amiable. Mental failure followed close upon a continued fever of some sort, two years and a half previous to admission to the asylum. Health had never been good since. Mental peculiarities were at first confined to causeless worrying about her children. Later, she became profoundly depressed and labored under delusions of suspicion of those about her. When admitted she was in feeble bodily health. Lower extremities were extremely œdematous, and urine contained albumin and casts. There was present as an almost constant symptom a considerable degree of bronchial irritation. There was persistent cough, with paroxysmal seizures of an asthmatic character. She became very asthenic, and finally died, as the result of pleural effusion, four months after her admission.

While the assumption of a uræmic origin seems the most natural explanation for many of the symptoms in the foregoing class of cases, there are other cases in which the prominent symptoms are manifestly of vascular origin. In the writer's experience this class has been the more numerous. In a paper read before the meeting of the American Neurological Association, in 1888, on "The Relation of Renal Diseases to Diseases of the Nervous System," Dr. Robert T. Edes belittles the importance of uræmia as an element in any of these cases. He denies that symptoms generally associated with acute and chronic Bright's disease, such as headache, sensory disturbances, dyspnœa, paralyses, neuralgia, itching, eruptions, etc., are uro-toxic. On the other hand, since many of the typical "uræmic" symptoms are wanting in these cases of insanity, he concludes that interference with the eliminating functions of the kidneys is not sufficient to account for all

the symptoms presented. He calls attention to the fact that so-called attacks of uræmia, in the midst of apparent health, are most common in the interstitial variety of Bright's disease, where the vascular element in the disease (by which he means high arterial tension, associated with hypertrophy of the left ventricle) is most common; and not that form in which the epithelium is chiefly involved. It must be borne prominently in mind that the disease, as described in the researches of Meigs and DaCosta, is primarily vascular, with secondary changes in other organs, of which the kidney lesion is but one. Not all patients suffering from this vascular fibrosis manifest mental perturbation, for the same reason that all do not present casts in their urine. As the changes are more advanced in one or the other organ, so will the functions of that organ be the more interfered with. In some of the cases which have come under observation the symptoms have at first suggested a possible organic brain disease, and have borne no slight resemblance to paralytic dementia. Delusions of an extravagant type have been met with occasionally. In a number of cases of mental decay following paralysis, there can be little doubt that the cerebral lesion was but an incident in the vascular changes of the Bright's disease. Dr. Edes dwells upon attacks of paralysis appearing a short time before death. He demonstrates, I think, that a rise in tension in the blood-vessels of the brain, either from spasm of the walls of the vessels, or from the violence of the impulse of the hypertrophied heart, is more likely to be the cause, than a sudden diminution in the amount of matter excreted by the kidneys. If instead of a localized œdema, with subsequent reabsorption of the effusion and disappearance of the motor disability, a rupture of the vascular coats occurs, there results a lesion of which vestiges remain during the entire subsequent progress of the disease. It is not unlikely that further investigations will enable us to include a larger number of cases of "dementia with paralysis" in this class. The three following cases are cited to illustrate this point:

A male, æt. 45. Father said to have died of paralysis. He was an industrious and hardworking man, and had attempted to manage a farm during the daytime and to carry on his trade (that of a shoemaker) at night. Two years previous to his admission he was stricken with left hemiplegia. Mental failure dated from this attack. He lost judgment, became confused, and developed delusions of suspicion. At the time of his admission to the Asylum there was marked arterial tension, with increase in the area of precordial dulness. During his stay in the Asylum many of his symptoms strongly suggested paresis. There was thickness of articulation and much muscular incoördination. Frequently occurring attacks of diarrhœa were a troublesome feature. Towards the latter part of his life he became very dropsical. Albumin and casts were found in his urine. He finally died in consequence of a pleural effusion, not quite four years after his admission to the Asylum. A post-mortem examination showed both kidneys to be atrophied and cystic. The heart, otherwise healthy, was enormously hypertrophied—weighing 22 ozs.

A male, æt. 65, a sailor; was known to have been licentious and intemperate, although no history of specific infection was obtainable. He was first admitted to a United States Marine Hospital, suffering from the effects of a left hemiplegia. His mental condition rendered it impossible to obtain from him any information as to the duration of the paralysis. During the six months of his stay in this Government Hospital he demented rapidly, becoming finally so restless and noisy as to render his transfer to the Asylum necessary. At the time of his admission his arteries were in an advanced stage of atheromatous degeneration. There were contractures and wasting of both the arm and leg on the left side. He was at first unable to express himself, but later he improved so as to make his wants known, and acquired a fair appreciation of his surroundings. His vision, which was imperfect from the start, failed progressively. He repeatedly sustained "seizures" marked by sudden and complete loss of consciousness, without accompanying interference with the heart's action. His attacks were accompanied by vomiting, but never by convulsions. Later, diarrhœa became a troublesome feature. Bed-sores developed, emaciation progressed, and vision became nearly abolished. His urine contained albumin in moderate amount and granular casts in abundance. He finally died in coma, nine months after coming to the Asylum.

The third case occurred in a man of exemplary habits, and without any inherited tendency to mental trouble. A little over two years prior to his admission to the Asylum he suffered an attack of paralysis. According to the account given by his physician he fell from his chair and remained unconscious for eighteen hours. The attack was accompanied by slight convulsions during the first few hours. There were stertorous breathing and great congestion of the head and face. Twice afterwards he had a similar attack; the last time six weeks previous to his admission to the Asylum. The last two attacks were similar to the first, but without convulsions or loss of consciousness. The paralysis does not seem to have been strictly limited to either side. His mind commenced to fail shortly after the first attack, and progressed rapidly during the interval between the last attack and his admission to the Asylum. His mental symptoms were chiefly those indicative of decay of the mental powers. Delusions were not present at any time. At the time of his admission to the Asylum he weighed 193 lbs., and presented

the appearance of being well nourished. There was marked arterial tension, with increase of the area of precordial dulness. No heart murmurs; no evidence of atheromatous degeneration; pupils normal; vision very imperfect, and could not be remedied by glasses. His gait was very paretic —equally so on both sides, and hand pressure was greatly diminished. There was some anæsthesia. The urine contained albumin and a few small hyaline casts. Dropsy was never present, even in small amount. His stay in the Asylum was marked by no special mental symptoms, occasional attacks of bewilderment being the most prominent mental manifestations. Less than a month following his admission a sudden œdema of the lungs overwhelmed him, and he died, within two hours, of suffocation. This œdema of the lungs was accompanied by several profuse watery discharges from the bowels. For several days previous to his death he had complained of constant and severe headache. He had become accustomed to brief attacks of dyspnœa coming on after rising in the morning.

"Insanity of Bright's disease" is not meant to designate a new form of mental disease. However, as indicating a probable origin of many cases hitherto not fully understood, it is an admissible term. It offers indications for temporary relief, establishes a prognosis in certain cases which, but for the presence of albumin and casts, might offer delusive hopes, and provides an explanation for the persistent downward course of many cases which have the outward appearance of uncomplicated cases of melancholia.

In conclusion, I present a brief summary of what I have attempted to consider in the foregoing pages.

1. The frequency with which evidences of chronic Bright's disease are found associated with mental derangement leads to the belief that the latter condition is often dependent upon the former as its cause.

2. This belief finds support and explanation in the present accepted ideas of the pathology of chronic Bright's disease, according to which the disease is no longer regarded as confined to the kidneys, but as possessing features which make it essentially vascular. These consist in structural alterations in the blood-vessels of the brain and spinal cord, as well as in the vessels of other organs of the body.

3. There are cases of insanity with chronic Bright's disease which are of uro-toxic origin, but in the majority of cases the mental manifestations must be regarded either as an expression of lowered nutrition or, as is more frequently the case, due to vascular changes in the brain, attended often by convulsions of other than uræmic origin; disturbances of speech and of locomotion.

4. Finally, in many cases of dementia with paralysis it will be found that the destructive brain lesion, with subsequent decay of the mental faculties, is the result of an alteration in the vascular coats of the brain, coexistent with an hypertrophied heart, and with structural changes in the kidneys.

ON THE MICROSCOPICAL DIAGNOSIS OF CANCER.

Read before the Medical Society of the District of Columbia, November 28, 1888.

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Cancer is a disease which is, unfortunately, but too common in all parts of the world; and whether, as some have asserted, there is a higher percentage of deaths from this cause in the District of Columbia and the adjoining States than elsewhere, or whether there is a tendency of these cases to gravitate hither from other portions of the country, certain it is, that the records of our Society, as well as the vital statistics of the District, show that we have at least our full proportion of deaths from this disease. To the theories as to its cause I shall but briefly refer, leaving also the practical subject of treatment to the physician and the surgeon.

A somewhat particular study of morbid growths, extending over upwards of twenty years, and observations founded on many microscopical examinations, as well as such clinical notes as I have recorded in my note-books, wherever such were obtainable, would seem, however, a sufficient basis upon which to offer some practical points which may be of advantage to the general practitioners, as well as to the surgeons included in the membership of our Society.

The minute structure of malignant growths has always attracted the attention of the most eminent pathologists, ever since the improvement of the microscope has enabled them to be studied under a magnifying power sufficiently strong to give those details of cellular structure on which their classification in modern pathology is founded. To a certain extent this classification has given us results in harmony with the clinical history of such growths, and been of practical use to the physician, whom it enlightens on obscure cases of internal growths, often enabling him to make a correct diagnosis when other signs fail, in such cases as afford an opportunity for the study of the morbid products expelled by the natural outlets of the body. When these chances do not occur, it is but too often, it must be admitted, that it only proves of *post mortem* benefit to the patient and his friends, in ascertaining after death the exact nature of the disease. Even here the aid of the microscope is frequently invoked, and clears up many otherwise doubtful cases of diagnosis where the unaided vision would leave the case in uncertainty, and the practical advantage

in the diagnosis of future cases presenting similar symptoms is not small.

In the majority of cases of external cancer of pronounced types, and especially in epithelioma, we are able to make the diagnosis with much precision, and a prognosis based upon such results is of a high degree of certainty. The surgeon is encouraged to act boldly where an operation is practicable, and the patient is induced to submit to an operation the arguments in favor of which might otherwise fail to carry conviction.

But there are some forms of morbid growth resembling in some particulars malignant disease in structure, where the natural history is widely different from that of the true malignant types, and in spite of the elaborately illustrated works on the subject, the physician will frequently come across forms not distinctly referable to any of the classified types. This is to be expected, because we now know that cancer is not, as was formerly supposed, an entirely foreign and separate entity, having its seat among the healthy tissues of the body, from which it draws nourishment while it destroys them, but rather the cellular manifestation of certain modifications produced in previously normal tissue by a process of disease not apparently governed by such well-defined and definite laws as would lead us to expect uniformly similar results in similar growths observed in different cases.

The possible production of cancer by a minute parasitic form of a vegetable nature has recently been again discussed, and though the omnipresent microbe has not yet been traced to its lurking-place in this disease, there is much plausibility in the theory of such an origin for benign as well as malignant growths.

The curious distortions of leaves, flowers, and other parts of the plant under the irritating influence of insect punctures, and the tumors and hypertrophies of limbs of trees and shrubs evidently due to extraneous causes at first, cannot fail to suggest to the student of nature a certain analogy to similar distortions in the animal structure, which, while it may be fanciful, is possibly a suggestion of a somewhat similar cause in both, modified in its results in the animal by its differing and more highly organized systems of nutrition and growth.

As far back as 1854, a member of the Royal Microscopical Society of England, Mr. Jabez Hogg, in his work on the microscope, expressed a belief in the "fungoid origin of cancer." But taking our knowledge of the structure of cancer as it stands, the question arises whether, in spite of the acknowledged ability of the microscope to distinguish its principal types, the surgeon is using that instrument to the extent of its power in diagnosis. Whether in fact, disgusted by a few contradictory results, he is not inclined to consign it to the category of wholly unreliable tests? While but few are willing to put themselves on record to this effect, the less guarded private utterances of some of our own members would seem to indicate such an opinion.

Let me briefly advert to the causes which I believe have induced this mental attitude on the part of some members of the profession. In the first place, as some one (Huxley, I believe), has remarked, the value of microscopical observations depends much more on the quantity and quality of cerebral tissue *behind* the visual organ of the observer, than it does upon the excellence of the lenses *in front* of that expressive feature. Some men seem never able to acquire the faculty of intelligent and discriminating observation. But this should no more discredit true microscopical work than the erroneous observations of early writers in ascribing certain diseases to microscopical germs, as malarial fever to the Palmella, for instance, should be used as an argument for the fallaciousness of all later work by other observers in the same direction. And it would be illogical for the surgeon to take the ground that because the electrical indicator gave erroneous results in the localization of a metallic missile in the case of President Garfield, therefore all future appliances of electricity as a guide to the surgeon in doubtful cases should be condemned.

Really good observers are sometimes overawed, as it were, by a previously announced diagnosis by men of high reputation, to the extent of modifying their own observations to accord with the weight of opinion among those who have viewed the case from an entirely different standpoint. The result is apt to be a sort of composite opinion, from which all true original judgment has been eliminated. But I take it to be the function of the microscopical observer, when appealed to in doubtful cases, to ignore all collateral evidence as much as possible, and pronounce an opinion independently of any other considerations on the case before him. Whenever I have allowed myself to be thus biased it has subsequently proved that my judgment would have possessed more value if entirely free from such influences, and it has been my habit for years, when called on to examine a case of suspected disease, whether cancer or other morbid process, to request that all information as to the case be withheld until I have written my opinion. Another advantage of this method is, that whereas the human memory is often treacherous, the *litera scripta manet*, and the possession of written copies of all opinions, has been of value in case the loss of the copy given the patient or his medical adviser might lead to dispute as to what such original opinion had been. After this has been done I endeavor to obtain for my notebook all points of peculiar interest in the case, and the final result whenever practicable.

I have in my cabinet sections of a thickened band of the mucous layer of the rectum in a case

in which the patient had procured the opinions of eminent surgeons in this city and New York. The identical piece from which my sections were made had been examined microscopically by different pathologists, and pronounced epithelial cancer. One of the observers who gave this opinion was the author of a valuable work on the diseases of the rectum. Yet this was a case where a thorough acquaintance with the normal structure of the part seemed to justify my opinion given in writing to the patient, that there was not a single spot in the section which could not be duplicated from a section of the normal rectum, a hypertrophy and somewhat abnormal position of the mucous follicles of the past having however produced in the sections an appearance somewhat resembling certain forms of glandular neoplasm, but certainly *not* the structure of epithelioma. The sections on which I based my judgment were, some of them, submitted by the patient to several expert microscopical diagnosticians in Baltimore and elsewhere, who without being informed of my opinion already given, coincided in their judgment of the case with the view taken by me. Had I been previously acquainted with the array of surgical talent that had pronounced the case one of cancer I might have been frightened out of my diagnosis, yet the patient, who had no doubt for some time carried the growth which was first submitted to me in April, 1886, has since been perfectly restored to health, after a not radical operation by electricity as I have been informed, and when last heard from had experienced no return of the growth.

This case serves to illustrate the importance of another requisite in microscopical diagnosis, for want of which the best powers of observation and the most cultivated judgment will sometimes fail, viz., a sufficient experience not only with morbid growths, but with all the normal tissues of the body. No one can be reliable as a pathologist in the study of the more evident changes which the unaided eye detects in disease, unless familiar with all the variations in health. This seems a truism, yet it is apt to be lost sight of in the applications of the microscope. A section through a Paccinian or tactile body in the finger of an infant, perfectly normal, was once submitted without remark to a microscopist, who unhesitatingly pronounced it to be epithelioma. Yet, the gentleman whose more particularly pathological studies led him to pronounce this opinion, was an eminent observer, *so* eminent that the ingenious youth who had interrogated him, being an official subordinate, was afraid to inform him of his error, and he never consequently derived the due benefit from that object lesson.

Besides a knowledge of normal tissues, the observer should be familiar with the changes produced by simple inflammation, hypertrophy, lesions of particular diseases, such as syphilis, etc. An acquaintance with the modifications due to chemical re-agents is sometimes useful, as well as considerable experience with vegetable and other extraneous structures, when discharges supposed to be from the bladder, uterus, etc., are searched for indications of cancer. Altered membranes and clots from the uterus are often of a very puzzling description, and without much familiarity with these discharges serious error may arise.

A rock on which many observers are wrecked is the improper selection by the surgeon of the portion of tissue to be examined. For fear of taking too much tissue, a small piece may be excised which on examination will show the effects of inflammatory induration, or hypertrophy of the part such as commonly occurs in the neighborhood of malignant growths and yet no true cancerous structure be included. The diagnosis is correctly made, but upon imperfect data, and the result is that the microscope, in common parlance, gets "a black eye" as an instrument of accuracy in diagnosis. In other instances a growth which in its initial stage has not fully attained the structure of carcinoma, if not removed, may subsequently proceed to develop its typical character and a diagnosis founded on an early examination be thus discredited.

In conclusion I will briefly relate a case of peculiar interest to me, in which at the first examination of the patient's urine I made the diagnosis of cancer, which has since been confirmed by the subsequent history and an autopsy.

A man, about 60 years old, was sent to me May 4, 1888, by Dr. N. S. Lincoln, for the purpose of having an examination of his urine. Patient was tall, dark complexioned, rather sallow but not cachectic in appearance, said he had pain in his back. Had not yet been examined by Dr. Lincoln, who wished to learn the condition of his urine he said. He sent for report the same afternoon, but it was not completed. The report sent to Dr. Lincoln was as follows:

Anal. 3720. May 4, 1888.—Color of urine natural, nearly clear, moderate amount of deposit, of a whitish flocculent character, moderately acid, spec. grav. 1.014. Quantity in twenty-four hours not stated, but patient had observed no change in that respect of late. Albumin about one-half of volume when coagulated. No excess of phosphates, no sugar, urea not below normal average per oz. *Microscopical examinations:* No casts. No fresh blood, but shreds of fibrin (from blood-clot?). The deposit contained a large proportion of pus, and epithelium from the bladder, and also numbers of large, many-nucleated cells, *not normal.* No crystaline sediment.

In a note to Dr. Lincoln accompanying the report I said: "As this patient was apparently very anxious about his case and might want to see the report of analysis, I write you separately in order

not to needlessly alarm him, to say that there is no doubt in my mind as to the character of the many-nucleated cells, viz., that they are typical cancer-cells. If any small clots are observed in his water, it might be well to have him drop them into weak spirits and let you see them."

May 10, 1888. *To Dr. Lincoln:* "I gave Mr. J.'s son the result of the second analysis in his father's case, and see no reason from the microscopical appearances in this analysis to change the opinion of the case formed at first. Absence of local pain and hæmorrhage may indicate a favorable form or early stage of the growth, if one exists."

The case progressed and I made frequent examinations of the urine up to July 18th. The albumin was always found, but diminished in amount ultimately. The color was for some time natural, and no clots or increased deposit to attract the eye, at first, but subsequently the urine became turbid, and the deposit more abundant, and pinkish in color, and toward the last a few blood corpuscles appeared. No casts were found at any time. The urea gradually fell below normal average. The many-nucleated cells were at first all separate and distinct, but in Analysis 3818, July 16th, they were also found in small continuous fragments of tissue, the largest of which were distinctly visible to the naked eye. Death occurred on the 3d of November, and an autopsy was made by Dr. D. S. Lamb.

[The right kidney was found, at the autopsy, to be converted into a cancerous mass, which under the microscope showed the structure of epithelioma.]

A CASE OF PERITYPHLITIS.

Read before the Medical Society of the District of Columbia, December 12, 1888.

BY T. E. McARDLE, A.M., M.D.,
OF WASHINGTON, D. C.

T. K., male, white, æt. 34 years, consulted me at my office on the evening of November 15, 1888. He complained of general malaise, with localized pain in the lower part of the abdomen towards the right side. He had a short, harassing cough. His bowels had been freely moved from some purgative pills taken the previous night. His pulse was 100, temperature 102.6°. I ordered him home and to bed at once and prescribed codeia and quinine, together with a strict liquid diet.

On the following morning (November 16), I found that he had passed a very comfortable night. A thorough examination revealed a tumor in the right inguinal region. The pulse was 80 and the temperature 100° F. Poultices were ordered. When I saw the patient again in the evening his pulse was 100 and his temperature 102°.

On the morning of the 17th Dr. J. Ford Thompson saw the patient with me. He had enjoyed a fairly good night and his bowels had moved naturally. The pulse was 100 and the temperature 101°. Pus easily detected. Poultices continued. Evening pulse 110, temperature 103°. On the morning of the 18th the pulse was 100 and the temperature 101°; the patient had passed a comfortable night.

Chloroform was given and laparotomy performed. After the evacuation of the pus, a drainage tube was introduced and the wound was dressed antiseptically. The patient took the anæsthetic badly; the nausea was distressing and the vomiting continued until 3 or 4 o'clock in the afternoon. At 9 o'clock in the evening, when I saw him, his pulse was 100 and his temperature 97.4°. I gave him some whisky and water, which he immediately vomited, together with a quantity of dark-green fluid. A hypodermatic injection of morphia ¼ gr. and atropia $\frac{1}{150}$ gr. was administered. He spent a very restless night and vomited at midnight after taking a pill of morphia gr. ¼ and atropia gr. $\frac{1}{150}$. The fluid was not dark as before. At 10 in the morning the wound was syringed with a carbolic solution, the drainage tube removed, an iodoform tent substituted, and the wound redressed antiseptically. Champagne, milk and lime-water were ordered. Pulse 100, temperature 97.4°.

At 5 in the afternoon the pulse was 96 and the temperature 98.6°. As he had vomited the champagne twice its use was discontinued. At 10 in the evening his pulse was 96, temperature 99.4° in the axilla. He had vomited at 8 o'clock. Suffered from hiccough and had been slightly delirious.

The wound was again syringed on the morning of the 20th and found to be cleaner than on the preceding day. The pulse was 76, the temperature 97.8°. He had had a bad night, as the vomiting and hiccough had continued. He was now better and able to retain a small quantity of champagne. Poultices were ordered. In the afternoon the pulse was 100 and the temperature 99.6°. The wound was syringed and found to be cleaner. An iodoform pad was applied and the poultices were continued. A suppository of morphia gr. ¼ and belladonna ext. gr. ⅙ was ordered.

At 10 P.M. I found that the patient had vomited before using the suppository, but not since. Meanwhile he had slept three hours. He felt much better. His pulse was 88, temperature 98.4°. The iodoform gauze was changed, another suppository ordered, and the poultices renewed. He slept well during the night, but vomited clear fluid at 7 in the morning. At 10 o'clock the pulse was 86, the temperature 97.6°. The wound was cleansed and dressed, and the poultices were continued. A bottle of citrate of magnesia was ordered to be taken in four doses at intervals of an hour each. He retained the first two doses but vomited the others. Whilst I was at his bedside at 5 o'clock in the afternoon he vomited a

pint of greenish fluid. The wound was cleansed and dressed. Two enemata were given by me, bringing away some small hard lumps of fæcal matter. He spent a very bad, restless night, and vomited many times. He had another small movement, hard and lumpy.

At 10 A.M. his pulse was 88, temperature 99°. The wound was syringed and the poultices were continued. Three suppositories had been used during the night without producing sleep. A grain of calomel was ordered every two hours until 3 grains were taken.

At 5 in the afternoon the pulse was 92 and the temperature 99.8°. The wound was again syringed; there was very little discharge. He had vomited frequently, twice while I was in the room. The fluid was large in quantity, yellowish-green in color, and bad-smelling. There had been no movement from the bowels, though all the powders had been taken. I washed out the rectum three times with some effect.

At 10 P.M. the pulse was 98 and the temperature 99.4°. The patient had vomited six times, and his bowels had been moved twice. The odor was horribly fetid. A suppository every three hours was ordered. The patient was restless until 2 A.M.; has not vomited since that time. Has had two bad-smelling movements.

At 10 o'clock the wound was cleansed and but little discharge found. Pulse 90, temperature 99.4°.

At 5 P.M. the wound was again syringed. The abdomen was softer, though there was some slight pain on the left side. Slight nausea, but no vomiting since morning. Poultices continued and suppository ordered at 8 P.M. After a good night's rest the wound was syringed at 10 in the morning, and the poultices were stopped. No nausea, but hunger. Takes plenty of nourishment. Pulse 84, temperature 98.6°.

At 5 o'clock the pulse was 100 and the temperature 99°. The patient spent a very comfortable day. A suppository was ordered at night and the patient slept well. The next morning, however, he felt oppressed and suffered from flatus. He had doubtless taken too much food. Ordered poultices to be applied and aromatic spirits of ammonia to be taken in teaspoonful doses. Pulse 80, temperature 97.8°. He spent a restless day; vomited five or six times; had a movement at 4:30 o'clock. He had taken very little nourishment during the day, so I ordered liquid bread. At 6 in the evening his pulse was 84, temperature 99.8°.

Although three suppositories were given him, he spent a bad night and slept but little. He had four dark fetid movements from the bowels and vomited eight times. He began to improve at 4 A.M., and now relished his liquid bread.

His pulse was 100 and his temperature 99.8° at 10 in the morning. The wound was cleansed and found to be filling up from the bottom. His bowels were moved twice during the day and at 2:30 he vomited. At 5 his pulse was 110, temperature 101.8°. At 7 his bowels were again moved.

At 10 the next morning his pulse was 96, temperature 98.4°. Feels well, takes plenty of nourishment, and expressed a desire to read the newspaper.

At 5 o'clock his temperature was 101,8°, pulse 106. He had passed an excellent day, and had taken plenty of nourishment. He had not been at all nauseated, and was entirely free from pain. There had been very little discharge from the wound. He used three suppositories and slept well during the night.

At 10 in the morning his pulse was 84, temperature 99°. In the evening his pulse was 100, temperature 101.6°. He slept well during the night, and in the morning his pulse was 84, temperature 98°. I ordered a bottle of citrate of magnesia, and his bowels were moved once before 5 o'clock. At that hour his pulse was 94, temperature 99.6. His bowels moved twice again, and he was restless until 2 in the morning. At 10 A.M. his pulse was 80 and his temperature 98.8.

From this time on, with occasional relapses, he continued to improve.

THE SEGMENT TREPHINE AND AN ASEPTIC TREPHINE.

Read before the Philadelphia County Medical Society, Feb. 27, 1889.

BY JOHN B. ROBERTS, M.D.,

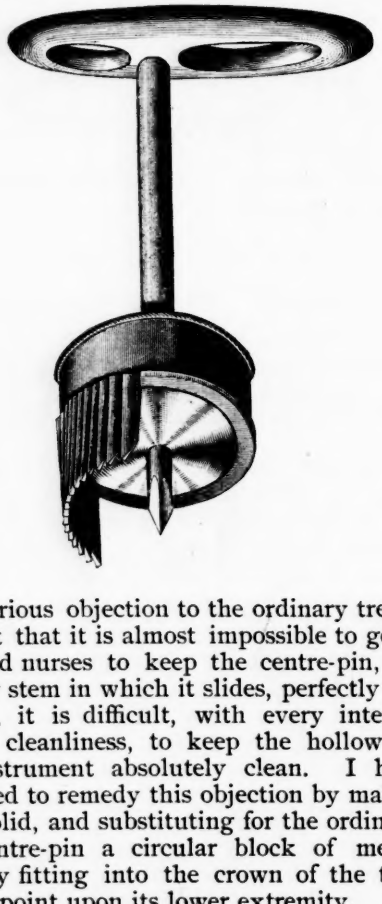
PROFESSOR OF ANATOMY AND SURGERY IN THE PHILADELPHIA POLYCLINIC.

The frequency with which operations are now done upon the skull and brain has made apparent the need of improvement in our instruments for opening the skull. Seven years ago I published[1] an account of my experiments with the surgical engine, as a means of making openings in the skull; and I still believe it an excellent and safe means of effecting entrance to the cranial contents. The chief disadvantages are the expense of the engine and its liability in ordinary hands to get out of order. This latter objection held good at least in one hospital with which I have been associated.

The ordinary trephine, either cylindrical or conical, will probably be used much more frequently, therefore, than the surgical engine; hence, suggestions to improve its character are not inadmissible. The "segment trephine," described in the *Operative Surgery of the Human Brain*,[2] is, I think, a valuable instrument with which to deepen any portion of the groove surrounding the button of bone to be removed, without cutting along its entire circumference. The skull is often very much thicker in some parts of

[1] Philadelphia Medical Times, 1881-82, xii, p. 206.
[2] Page 78.

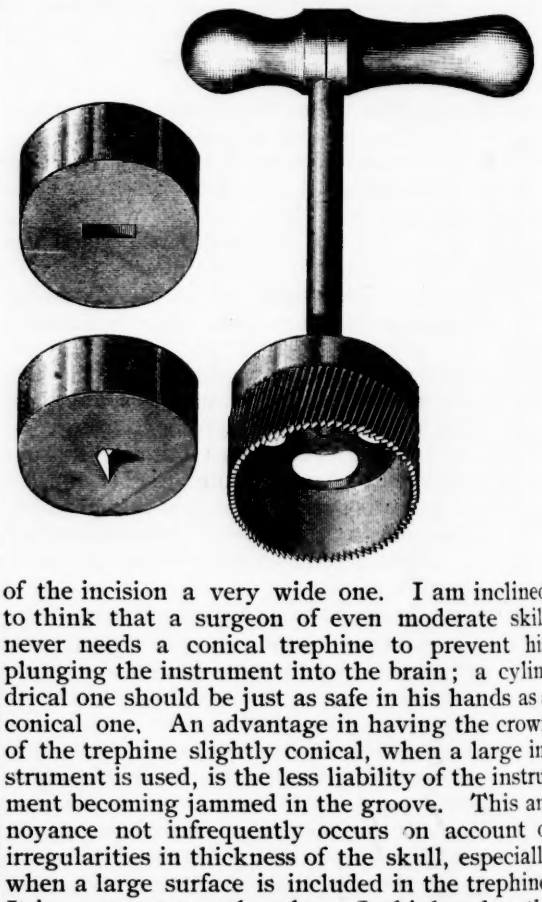
the area of operation than in others, and the ordinary trephine has to be tilted to avoid injuring the cerebral membranes at the points where the skull is thinnest. Tilting is not always easily done when the trephine is large and deeply imbedded in the bone. A "segment trephine," having the same radius of curvature as that with which the operation was begun, enables me to cut deeper, and with great care at any selected part of the groove. The accompanying illustration renders a detailed description of the instrument unnecessary. The cutting edge extends one-third of the circumference, and the centre-pin, not requiring retraction, may be immovably fixed to the head of the trephine. The instrument has no groove in the stem or handle to collect septic matter, and is readily cleaned.



A serious objection to the ordinary trephine is the fact that it is almost impossible to get assistants and nurses to keep the centre-pin, and the tubular stem in which it slides, perfectly aseptic. Indeed, it is difficult, with every intention of perfect cleanliness, to keep the hollow stem of the instrument absolutely clean. I have endeavored to remedy this objection by making the stem solid, and substituting for the ordinary sliding centre-pin a circular block of metal, accurately fitting into the crown of the trephine, with a point upon its lower extremity.

As soon as the surgeon has cut a groove deep enough for the teeth of the trephine to be maintained in position upon the skull, the central block is taken out of the crown of the trephine, and the operation continued as with the ordinary instrument, after retracting the centre pin. Upon the upper surface of the block is cut a shallow slot, into which fits a slight projection from the upper part of the trephine crown. This compels the block to rotate with the rest of the trephine when the operator is making the first incision into the bone. The trephine itself is made as thin as possible, in order that the groove between the disc of bone removed and the rest of the skull may be very narrow. The button of bone, when replaced, can then be held in position more readily than if the grove is a wide one. I believe that after using a thin trephine, such as this, it at times will be well to stitch the button of bone into position by catgut sutures passed through the periosteum, which may be allowed to remain upon the surface of the disc of bone, and upon the skull adjacent to the trephine opening.

The crown of the trephine must not be too conical, because such a trephine in cutting through the thick skull makes the outer portion



of the incision a very wide one. I am inclined to think that a surgeon of even moderate skill never needs a conical trephine to prevent his plunging the instrument into the brain; a cylindrical one should be just as safe in his hands as a conical one. An advantage in having the crown of the trephine slightly conical, when a large instrument is used, is the less liability of the instrument becoming jammed in the groove. This annoyance not infrequently occurs on account of irregularities in thickness of the skull, especially when a large surface is included in the trephine. It is more apt to take place, I think, when the groove is made by a cylindrical instrument, which does not make the external aspect of the incision wider than the internal.

The weight of the metal handpiece can be minimized by fenestræ, or by making the handle hollow. It is best to attach the handpiece to the stem eccentrically, as suggested by Horsley, since the hypothenar portion of the palm needs a longer lever than the thenar.

This aseptic trephine, it will be seen, is somewhat similar to the safety trephine of Hopkins,[3] who suggested the use of a cylindrical block instead of a centre-pin, because of the possibility of the surgeon forgetting to withdraw the centre-pin, and, therefore, wounding the dura mater. His device contained a spring to keep the block thrust forward, and was, therefore very difficult to clean. In fact it was not constructed with an idea to facilitate asepsis, but to prevent careless puncture of the dura.

MEDICAL PROGRESS.

RADICAL CURE OF HYDROCELE OF THE TUNICA VAGINALIS.—BRIGADE-SURGEON SIBTHORPE reports from the General Hospital, Madras:

Twenty-six operations for paracentesis of hydrocele are recorded under the head of minor operations in the senior surgeon's wards last year; in 14 of these a radical cure was attempted, undiluted tincture of iodine being injected in 10 cases, and pure carbolic acid in 4. As far as these small numbers go they show that there is not much to choose between the two methods; both appear equally efficacious in certain cases, and both are generally followed by some local and constitutional disturbance. The carbolic acid, however, appears to be followed by less pain than the iodine, though, with it, pain is by no means absent, as some surgeons would have us to believe.

Of the 14 cases, 9 can be claimed as cures; Case 2, with little local trouble, after six days; Case 5, a double hydrocele (there was a good deal of inflammation), discharged cured on the twentieth day, the left being reduced to the size of a hen's egg, the right smaller; Case 6, having been three times tapped and twice injected, left the hospital with a considerable amount of fluid in the tunica, which completely disappeared afterwards under the use of tincture of iodine to the scrotum; Case 7 was cured on the twenty-second day, the local trouble having been slight; Case 8 left the hospital on the twenty-eighth day, the local trouble having been slight; Case 9 left the hospital on the twenty-fifth day, having had only slight swelling after injection; Case 10 left on the eighth day, with the swelling going down. All these cases were injected with tincture of iodine. Case 11 was tapped twice, and injected with pure carbolic acid; he had a good deal of pain and swelling, with some constitutional disturbance; a small abscess formed at the seat of puncture; this was followed by a sinus, which necessitated his being kept under treatment for a long time. Case 12 absconded a month after the operation, with the swelling going down. Case 14 absconded the second day after the operation, so it was impossible to say what was the result.

[3] Annals of Surgery, 1885.

There were partial cures in 2 cases, namely: Case 1, after injection with tincture of iodine on two occasions, suffered a good deal from pain and constitutional disturbance; he left the hospital with the part still enlarged thirteen days after the second operation. Case 3 left the hospital on the fifth day after the operation with some swelling remaining. In Case 4 castration had to be performed, as the two injections of tincture of iodine had been followed by failure, and the testicle was found atrophied when the sac was cut into. In Case 13 suppuration following an injection with pure carbolic acid required free incision and drainage, which was eventually followed by a cure. The long time taken in the cure in some of these cases, and the histories of the failures, lead one to question which is the most suitable operation for the cure of old-standing hydroceles, where the tunica is much thickened and very much enlarged. No doubt the treatment by injection is by far the most suitable for moderately-sized and comparatively recent tumors.

I would like to call attention to an interesting paper by Mr. J. S. McArdle, published in the *Dublin Journal of Medical Science* of September, 1887, on this subject. He alludes to the fact that the operation of incision for the radical cure of hydrocele is as old as the time of Celsus, but that it had fallen into disuse, and has been only revived since the antiseptic method of dressing wounds has come into use. He gives the following description of the methods now in use:

Incision (Volkmann).—An incision is made from the external abdominal ring to the base of the scrotum, and reaching down to the tunica vaginalis. That membrane is incised along its entire length, and bleeding vessels ligatured. The tunica vaginalis is then washed with a 3 per cent. solution of carbolic acid, and its edges applied to those of the skin by numerous points of fine silk suture; the dressings are then applied. Englisch remarks that it is well to leave the ends of the sutures long, so as to avoid the difficulty of finding them in the swollen tissues when, on the third day, their removal becomes necessary.

Partial Resection (Julliard).—After the skin and tunica vaginalis have been cut, as in Volkmann's operation, the redundant portions of the latter are removed and the edges of the remaining portion brought together with fine catgut. A drainage tube is then laid in the wound, up to but not into the tunica vaginalis, and the skin wound closed.

Complete Resection of the Parietal Tunica Vaginalis (Bergmann).—After section of the skin and tunica vaginalis, the latter is dissected off close to the epididymis and testicle. Bleeding vessels are then ligatured, a drainage tube laid in, and the skin wound closed by numerous points of silk suture. In all the operations a 3 per cent. solution of carbolic acid is used for washing the parts. Bergmann claims that sloughing of the tunica

vaginalis, cellulitis, necrosis of the testicle, and scrotal abscess follow injection more frequently than the method of incision or resection. He also states that the method of excision or incision takes very little longer, and gives the following relative dates of healing after the different methods:

Injection.—Billroth, 9th day; Stoltz, 9th day; Weiss, 8 to 9th day.

Incision.—Volkmann, 8th to 10th day; Küster, 14th day; Lister, 17th day; McArdle, 12th to 14th day.

Excision:—Julliard, 10th day; Bergmann, 11th to 12th day; McArdle, 7th–12th day.

The chances of recurrence are much less after entire incision, partial resection, or complete resection, than after injection. Mr. McArdle quotes 315 cases of injection by different surgeons in which the disease recurred in 13 per cent.; 245 cases of incision in which it recurred in 2.4 per cent.; 53 cases of partial resection in which it recurred in 1.9 per cent.; and 22 cases of complete resection in which the disease did not recur. He only recommends these methods for cases in which the trial of injection has been made and has failed. —*British Medical Journal*, February 23, 1889.

A CASE OF ELEPHANTIASIS ARABUM is reported by DR. R. W. FELKIN, of Edinburgh, as follows: On the 14th of July, 1888, I was asked to see an unmarried lady, a Eurasian. Her age was 33, her height 5 feet 2 inches, and her weight 11 stones 4¼ lbs. She was born in India, and had resided there most of her life. She had always enjoyed good health, with the exception of suffering now and then from intermittent fever. She had led an active life, and had apparently undergone considerable exertion. Up to the beginning of 1887 her appetite had always been good, but she had been remarkably thin. After a rather severe attack of fever early in 1887 she noticed that she commenced to increase in size, and that her appetite was capricious. She took a great dislike to fish, and always vomited after eating it. She had also occasional attacks of nausea and vomiting with headaches. Every now and then her occupation became rather tedious to her, and she sometimes felt as if she could hardly keep up. In September, 1887, as she felt gradually growing worse, she decided to leave India for a time; and for some unknown reason she was weighed before starting on her journey, and felt surprised to find that she weighed 9 stones 8 lbs. The voyage home seems to have done her good, for when she landed in England she felt better than she had done for some time previously, and this improvement in her feelings continued for two or three months. She noticed, however, that she still increased in size, and that her skin was at times itchy and very irritable. Her limbs, too, felt painful and sore, more so than they had done in India. During the spring of 1888 she was very busily employed, walking about a great deal; in fact, she told me that she was more or less on her feet from 9 in the morning till 10 at night. In June, 1888, she felt quite unable to continue her exertions. Her arms and legs felt heavy and powerless, her appetite became very bad, and she felt dull, low-spirited and miserable. Her food, too, frequently disagreed with her. At the beginning of July she decided to take a few weeks' rest, and she then came under my care.

On examining the patient I found her to be rather nervous. Her tongue was slightly coated with a brownish-yellow fur; her pulse was 104, full, and almost bounding in character; her temperature was 100°, respiration 24. Her heart and lungs were apparently quite healthy; her liver was slightly enlarged, the area of dulness being 5½ inches in the mammary line; the spleen was markedly enlarged, and extended to within 3½ inches of the umbilicus. On examining her integumentary system, I found that a remarkable hypertrophy had taken place; this hypertrophy affected the whole of the body with the exception of the head and neck, the forearms and hands, the legs below the knees and the feet, also the anterior aspect of the trunk from 3 inches below the clavicles to the umbilicus, and the posterior aspect of the body between the scapulæ and underneath them. The upper arm measured 36½ cm. in circumference at its thickest part on the right side, and nearly 36 on the left; the thigh on the right side at its middle third measured 71 cm., and nearly the same on the left; the calf on the right leg measured 35 cm. in circumference at its thickest part, and that of the left leg the same. There was distinctly less hypertrophied tissue upon the shoulders and beneath the scapulæ, and a deep groove separated the masses of hypertrophied tissue over the scapulæ. There was very marked hypertrophied tissue in the lumbar region and over the lower part of the abdomen below the umbilicus; in fact, it might almost be described as a girdle of hypertrophied tissue, which sank down several inches when the patient was in the erect position. I was, unfortunately, unable to obtain any more detailed measurements, and I much regret that it was impossible to persuade the patient to consent to a proper photograph being taken of her remarkable condition. I reproduce, however, two instantaneous photographs, which may serve to give some idea of her condition after a week's treatment and her state shortly before she left my care. The skin in the regions I have above mentioned was darkly pigmented, and formed a distinct contrast to my patient's natural complexion; it was rough, having somewhat the appearance of the rind of a boiled orange; it was tense, and appeared to be bound down to the subcutaneous tissue; this was especially the case in regard to the upper arms, the two masses of tissue situated below each clavicle, and those over the

scapulæ, but in the other regions of the body the mass of tissue had a certain amount of movement; for instance, when the patient was in the erect position, the masses of hypertrophied tissue which encircled the thighs descended, especially in front, where they completely overlapped the patellæ. On palpation, one experienced the sense of dense, brawny, slightly elastic hardness. The skin did not pit on pressure, or hardly so, but it was slightly painful to the touch. In many places, especially over the buttocks, it was distinctly nodulated, and presented a most typical elephantoid appearance, which appearance was less marked in the upper part of the body. The glands in both axillæ and in both groins were enlarged; in the natural folds of the body there was a slight exanthematous eruption. I examined the blood and the urine frequently during the progress of the case, and also punctured the tissue in various parts of the body, as I thought that at first I might have to deal with a lymphoid variety of elephantiasis; no lymph, however, could be obtained. The amount of urine passed varied from 50 to 70 ozs. in the twenty-four hours; the sp. gr. varied from 1012 to 1025. With the exception of some albumin which was present in the urine for the first three weeks, nothing abnormal could be detected. On one occasion I thought I saw a few ova of the Filaria sanguinis hominis, but repeated microscopical examination gave no confirmation. The microscopical examination of the blood gave no results. Menstruation was irregular and slightly painful.

Treatment.—Absolute rest was enjoined, and the patient had a hot bath almost every day. A moderate amount of bland food was ordered, consisting chiefly of milk (the patient could never eat fish; I tried her with it on several occasions, but it always caused nausea and vomiting). The patient was regularly massaged. Commencing with half an hour a day, the rubbing was subsequently increased to an hour and a half, and the constant current battery was applied for twenty minutes each day. A mixture was prescribed containing quinine, arsenic, iron and strychnine, and the bowels were regulated by the frequent administration of aperients. The progress of the case was in every way satisfactory; with the exception of a slight rise in the temperature for six days after the massage had been commenced, all went well. The patient complained of nothing excepting the battery and the pain that the massage gave her during the first three weeks. The massage and battery were discontinued about the 10th of September, by which time the skin had become normal in character — in fact, had returned to its usual condition, and all tension and hard feeling had disappeared. A remarkable diminution had taken place in the circumference of the limbs, the circumference of the upper arms having been reduced to 25 cm., and the middle third of the thighs only measuring 54 cm. in circumference. The mass of hypertrophied tissue encircling the body had quite disappeared. The patient stated that she felt quite well, buoyant, and fit for work. She could walk with ease and comfort, and by the middle of October she was apparently quite restored to health, and has continued so to the present time. I should perhaps mention that for a week or two after her prolonged rest the patient suffered from slight swelling of the feet and ankles. This condition, however, completely disappeared.—*Edinburgh Medical Journal*, March, 1889.

New Antiseptics in Phthisis.—Dr. C. Theodore Williams, after speaking of the results obtained with phenyl-propionic acid (see The Journal of last week), says:

Phenyl-acetic acid ($C^8H^8O^2$) belonging to the same series as phenyl-propionic acid, resembles it closely in taste, but has a more acid reaction. It dissolves in alcohol 1 in 6, and when thus dissolved is more soluble in water, so that 20 minims of the alcoholic solution is taken up by a small amount of distilled water. The alcoholic solution was given in doses of 10 minims to 20 minims three times a day, under the same conditions as the phenyl-propionic acid, to 19 cases of phthisis.

Nature of Cases and Duration of Disease.—The patients were 14 males and 5 females, the ages of the males varying from 18 to 40, with an average of 29.6 years, and those of the females varying from 14 to 40, with an average of 21 years. There was a great variety in the duration of the disease in these patients, as it ranged from 2 months to five years, the majority having at least one year's symptoms. One was a case of scrofulous phthisis, and one a case with cavities in both lungs and right pneumothorax. One patient, a girl of 18, apparently contracted phthisis from nursing a sister who was in a far advanced stage of the same disease. In two cases pyrexia was present.

State of Lungs.—Nine patients had tuberculization of one or both apices, the right lung being affected in three, the left in three, and both apices in 3. In most cases the tuberculization did not extend beyond one lobe. In 10 patients cavities were present, in 6 the cavity was limited, and the opposite lung free; in 2 others there was excavation of one lung and tuberculization of the opposite one. In 2 patients cavities existed in both lungs, and in one of these patients right pneumothorax had supervened. There were therefore 7 cases of double affection, against 12 of single affection. The sputum was examined for tubercle-bacilli in 15 cases, and these organisms were detected in all in varying abundance. The patients took the phenyl-acetic acid for periods varying from 21 to 89 days, the average being 45½ days, and in no

case did it give rise to any unpleasant symptom. The odor was perceptible in the ward, though never in the patient's breath or in any of the secretions. All other medicines, except purgatives when required, were suspended during the trial of the drug.

General Results.—Thirteen improved, 3 greatly; 4 deteriorated; and 3 remained stationary. The improvement here consisted in gain of weight, strength, and color, and doubtless this was partly due to the diminution of cough and expectoration. The weights of 18 out of the 19 cases were recorded, and these show gain of weight in 12, loss in 4, and a stationary condition in 2; the gain varied from 1½ pounds to 9½ pounds. The losers in weight included the 2 pyrexial cases and the pneumothorax patient, who died later on.

Local Results.—Twelve patients showed an improved condition of lungs, 4 showed a worse state, and in 3 it was neither better nor worse. The improvement consisted of subsidence of cough and reduction of expectoration, with diminution in the physical signs. In the worse cases there was either advance or extension of the disease, or both. Among the "improved" cases 8 were first-stagers, and in 7 of these diminution of physical signs is noted; and 4 were third-stagers. This shows local improvement in eight-ninths of the tuberculization cases, and in only two-fifths of the cavity cases. The effect on the cough and expectoration was very marked, both being reduced thereby. It would thus appear that the phenyl-acetic acid produced very satisfactory results; general improvement taking place in 68.4 per cent., local in 63.15 per cent. On the whole this acid appears to be more successful than its congener, phenyl-propionic acid, as the subjoined figures of the percentages of improvement will show:

	Patients	Improvement. General per cent.	Local per cent.
Phenyl-propionic acid . . .	20	65.0	25.0
Phenyl-acetic acid	19	68.4	63.4

In gain of weight the phenyl-propionic acid cases had the advantage, as 70 per cent. of these gained weight against 66 per cent. of the phenyl-acetic acid cases.

Neither phenyl-propionic acid nor phenyl-acetic acid[1] appeared to have exercised the slightest influence on pyrexia, and this, considering how closely allied they are to antifebrin and other antipyretics, is very remarkable.

It may be naturally asked, did these patients fare better than similar cases treated with cod-liver oil and bitter tonics who were on the same dietary? Cod-liver oil is a food, not a medicine, and so we can hardly pit these new medicines against it; but as regards the usually prescribed tonics, such as quinine and mineral acids, I question if any of these can show equal results to the above, and I think therefore that these antiseptics merit a fair trial. I would close this paper with the following conclusions:

1. Phenyl-propionic and phenyl-acetic acid promote appetite, digestion, and assimilation in phthisis, and thus cause gain of weight.

2. They are well tolerated in considerable doses by patients for long periods of time.

3. Their influence on the lungs is less marked than their constitutional influence, but phenyl-acetic acid acts more beneficially on the lungs than phenyl-propionic acid, and appears to reduce cough and expectoration.

4. The use of phenyl-acetic acid appears to be more indicated in cases of tuberculization, and that of phenyl-propionic acid in excavation cases, but a larger number of observations are required to speak with certainty on this point.—*Practitioner*, February, 1889.

[1] These drugs are very difficult to obtain. They are prepared by Schuchardt, of Gorlitz, and have been obligingly procured for the Brompton Hospital by Messrs. Burroughs, Wellcome & Co., Snow Hill, E. C., who now supply them.

SALICYLATE OF CRESOL.—At a meeting of the Academy of Sciences PROF. BOUCHARD read a note for Dr. Letzinski, of Bern, on the salicylate of cresol, which is not soluble, and which is a powerful antiseptic. This medicament has, according to the author, given good results in acute rheumatism. As it is possible to saturate the intestines without inconvenience, and as the microbe of cholera appears to have its principal habitat in the intestines, Dr. Letzinski thinks that this substance may be employed with success in the prodromic period of the choleraic attack. M. Bouchard, however, makes some reserve on this last point, for he does not participate in the opinion of those who hope to cure cholera with antiseptics introduced into the intestines.—*Lancet*, February 9, 1889.

NATURE AND TREATMENT OF DIABETIC COMA.—DR. STADELMANN, of Dorpat, in a recent article in the *St. Petersburgische Wochenschrift*, points out the great similarity which seems to exist between the coma of diabetes and the condition produced in herbivorous animals by inducing acid intoxication. Amongst other points, he refers to some analyses by Minkowski, of the gaseous contents of the blood. In the normal condition, the blood of the rabbit contains 25 per cent. of carbonic acid; but when the animal is suffering from artificially induced acid intoxication, the carbonic acid is diminished. Thus, in one instance, Minkowski found it 16.4 per cent. with a moderate degree of intoxication; when the latter was increased, the percentage of carbonic acid fell further, first to 8.8, and finally to 2.9 per cent. In order to compare this with the gaseous changes in the blood of diabetics, he examined the blood of a patient before and during

coma, the carbonic acid being respectively 17 and 3.34 per cent. In order to ascertain whether this diminution of the carbonic acid in the blood was merely due to coma as such without reference to its cause, he examined the blood of a comatose patient, not a diabetic, whose condition was due to meningitis. Here the carbonic acid amounted to 28.2 per cent. The acid existing in diabetes appears to be oxybutyric acid, which in some cases appears in the urine to the extent of something like 3 ounces per diem. Some years ago Dr. Stadelmann found a new acid, which he believed to be crotonic acid, in considerable quantity in certain cases. He now, however, considers it merely a substitution-product from oxybutyric acid.

The indications for treatment supplied by these views are, of course to, combat the acid by large quantities of alkali. Several attempts have been made to treat diabetic coma by injecting into the veins from 1 to 4 ounces of carbonate of soda dissolved in about four pints of water, with a little chloride of sodium. In only one instance, however, has this proved successful, and unless it is done very early no good result can be fairly expected of it. It is found that the urine in twelve hours after the injection is intensely acid. Better results are to be obtained in attempting to ward off coma by giving alkalies freely. Thus, Dr. Stradelmann prescribes about an ounce of tartrate or citrate of soda dissolved in about half a pint of soda-water two or three times a day, and has found great reason to be satisfied with this line of treatment. Of course, if coma should come on, he would have recourse to alkaline intravenous injections without loss of time.—*Lancet*, Feb. 9, 1889.

THE LOCAL TREATMENT OF LARYNGEAL PHTHISIS.—DR. A. SOKOLOWSKI, of Warsaw, concludes an article on the treatment of laryngeal phthisis, with the following summary:

1. A cure of laryngeal phthisis, though seldom effected, is possible.

2. Cicatrization of each ulcer which takes place by itself, or through local application, is closely related to the general condition and the character of the local changes in the lungs.

3. The best local results are obtained from the combined treatment by lactic acid, surgical procedures, and the galvano-cautery.

4. General treatment should go hand in hand with the local treatment.—*Wiener klin. Wochenschrift*, No. 4, 1889.

MEDICATED THALLIN BOUGIES IN GONORRHŒA.—DR. JOHN M'CAW, of Dublin reports the following case: H. J. had impure connection four days before he applied to me for relief. His symptoms were those of acute gonorrhœa, the disease having been considerably aggravated in consequence of his having been drinking heavily both before and since he contracted it. The yellowish-green discharge from the urethra was abundant; he suffered severely during micturition, and there was great tenderness along the whole course of the penile urethra. The night before he came to me he was obliged to rise five times to pass water. He had the disease seven years ago, and was then under treatment for about two months with a medical gentleman in this town, who gave him copaiba. The line of treatment adopted in this case was by the introduction into the urethra of medicated bougies, and the medicament consisted of sulphate of thallin of 5 per cent. strength. Before introducing the bougie I made the patient micturate, in order to clear the urethra of discharge, and I then passed the bougie up to the ring, and directed him to hold the meatus quite close, so that none of the application could flow out as it melted. I kept him lying on his back for 20 minutes, at the end of which time I withdrew the spring and closed the meatus with cotton wool. During the time the bougie was in the urethra he complained of smarting pain, but after I withdrew the spring he said the pain ceased entirely, and he expressed himself as feeling comfortable. He introduced one every evening after this, following carefully the directions I gave him; and on the third day after he had been with me he called to say he was quite cured, having no discharge of any kind, and no pain on passing water. The day following happened to be his busiest day in the week, as he had to work to 12 o'clock at night, and be on his feet the greater part of that time. In consequence of this he could not get to using his bougie that day at all, and on the next morning there was a slight return of the former symptoms; but he began anew his treatment, and after using two more bougies, was again perfectly cured. He has remained so since, although he has undergone the heavy day of the week which caused him to relapse before, and this time with impunity. No bad after-effects of any sort resulted from the treatment, and my patient was very grateful, as well as very much surprised and delighted, for he had been looking forward to a course of copabia-drinking with anything but pleasant recollections.—*Dublin Jour. Med. Science*, March, 1889.

MERCURIAL TREMOR.—M. LETULLE reports the case of a man of 39, who was, at his work, exposed to emanations from the acid nitrate of mercury. For eleven years he suffered in no way except that his teeth became black and fragile. At this time he served three years in the army and then resumed his trade. Ten years later he had his first attack of mercurial tremor. A course of sulphur baths and iodide of potassium relieved but did not cure him. The tremors were worse in the morning, almost imperceptible about 4 to

5 P.M., and again very marked in the evening. Suddenly one day the tremors became so violent that the man was thrown down by them and was so violently convulsed that he could not walk ; in this condition he was brought to the hospital.

When perfectly at rest in bed the movements were slight, but they were very much intensified by any voluntary effort. The motions were extensive, rapid, arhythmic, not like those of any disease, though choreiform, and were, perhaps, more marked upon the left side. There was an anæsthetic area on the back of the right forearm and hand, and the man said that since the first attack of tremor his vision had been impaired. There was some narrowing of the left visual field without any notable color-blindness. These peculiar symptoms led Letulle to name the malady *mercurial hysteria*. He accidentally discovered that constricting the limb would check the tremor, and he finally permanently stopped it by the application of an elastic ligature, and the passage of a magnet up and down the limb. He therefore concluded that mercury in a case like this produced no serious structural lesion in the brain or cord, but appeared to exalt in a singular way the activity of the nervous centres and profoundly disturb the harmony which governs their functional synergy.—*La France Médicale*, November 8 and 10, 1888.

ALPHA-OXYNAPHTHOIC ACID AS AN ANTISEPTIC.—It is now six months since alpha-oxynaphthoic acid was brought out as an antiseptic. Helbig (*Therap. Monatsh.*) records what has been effected by it so far. He recommends a collodium made from it (0.5 per cent.) as a substitute for iodoform collodium, as it is a very strong antiseptic. It has the advantage over the iodoform preparation of not irritating the skin of sensitive subjects, and of being more staple. There can be no doubt that iodoform collodion is by no means a satisfactory preparation. Efforts are being continually made to improve it, so that this substitute should find a wide field for trial. The same author recommends an antiseptic wool in the treatment of ulcers and wounds, He prepares it as described under :

℞ Acidi *a*-oxynapth . . . . . ʒj
Spiritus vini rect . . . . . ʒviij
Glycerini . . . . . ʒiss
Fuchsini . . . . . gr. 1-12
℥

The resultant liquid is sufficient for 7 ounces of wool, and gives a product which, when dry, contains about 1.4 per cent. of acid. The paper shows, on the whole, that there is plenty of room for good new antiseptics, although we have so many already.

PHYSIOLOGICAL ACTION OF SULFONAL.—From some experiments on this subject W. J. SMITH draws the following conclusions: 1. In moderate doses sulfonal is completely transformed into very soluble compounds (sulphacids); in this respect it is distinguished from a large number of similar bodies, the disulphides among others, which pass through the organism unchanged; for example, ethylene diethylsulphide. 2. Sulfonal does not affect the elimination of sulphuric acid, which shows that the organic compounds formed by sulfonal have great stability. 3. In moderate doses sulfonal has no influence on organic combustions.

COMBINATIONS OF LANOLIN.—DR. STERN, a specialist in skin diseases, publishes in the *Therap. Monatsh.* some notes on new combinations of lanolin. "Sapolanolin" is a mixture of 2½ parts of anhydrous lanolin to 2 parts of pure soft soap. With this base all medicaments may be mixed with the exception of salicylic acid. The author used it for applying boric acid, tar, white precipitate, resorcin, etc. These ointments were found to be specially advantageous in inveterate infiltrated eczema, in mycosis and seborrhœa. Against psoriasis capitas he used an ointment made as described hereafter :

℞ Hydrarg. precip. alb. . . . . ʒj
Saponis mollis . . . . . ʒiv
Lanolin anhyd. . . . . ʒjss
℥

Anhydrous lanolin is of course simply the ordinary lanolin of commerce, deprived of its 25 per cent. of water. Sapolanolin with white precipitate, is, according to the author, just as effective on the head as chrysarobin is on the body. As a paste which adheres to the skin, without necessitating the use of a bandage he used a mixture of

Oleum olivæ . . . . . ʒij
Cera flava
Lanolinum anhyd. ana . . . . . ʒss

The ointment is a pale yellow color, and of thick consistence. It can be mixed with all other ointments when, for the treatment of eczema, the use of such a paste is indicated. Another suggestion of the author is the use of lanolin injections for the urethra, such as the following :

℞ Zinci sulphatis . . . . . gr. x
Aquæ . . . . . ʒij
Dissolve and add to—
Lanolini anhyd . . . . . ʒv
Olei amygdal . . . . . ʒiij
℥

Or, as under—

℞ Acidi salicylatis . . . . . gr. v
Dissolved in—
Olei amygdal . . . . . ʒiij
Lanolini anhyd. . . . . ʒj
℥

Injections are made with an ordinary syringe, and it is found that the medicaments are very readily absorbed by the mucous membrane.—*Provincial Medical Journal*, March 1, 1889.

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PRACTICAL ANATOMY IN THE COLLEGES.

In looking over the "requirements for graduation" of the ninety degree-conferring regular medical colleges of the United States, one is particularly struck with the variety of requirements in regard to practical anatomy. Some of the schools require thorough dissection of the whole body; some "certificates of at least one course of practical anatomy;" others "practical anatomy during two sessions, and dissection of all parts of the cadaver;" still others require "dissection of one lateral half of the body;" and some do not mention practical anatomy in their requirements for graduation.

What must be the surprise of the recent graduate of a college that requires a minimum amount of dissection, to read that John Hunter, Sir Astley Cooper, and other eminent surgeons of the olden time scarcely considered that they were entitled to their breakfasts until they had done some dissection—and this every day during their professional lives! We would not be understood as holding the opinion that dissection is the best exercise for acquiring an appetite in the morning, nor that it is necessary that each surgeon should spend some part of each day in dissecting. But anatomy can be learned best by dissection; and it appears that practical anatomy is far too much neglected in the colleges. In some of the schools it can scarcely be otherwise than that the student is simply introduced to the study of anatomy. Certainly, some of the graduates are not well acquainted with the subject. Anatomy is a subject for the practical study of which the medical man has but little time or opportunity after he gets into practice. Like chemistry and physiology, it must be learned at the college, or the chances are, it will never be learned.

Is the incentive to the study of practical anatomy in the schools sufficient? We think not. Not being required, in the majority of instances to pass practical examinations in anatomy, the student, in a large number of cases, thinks it quite sufficient if he knows enough of the subject to write on paper the answers to certain questions. He would view the matter in an entirely different light if he had to demonstrate (as a part of his examination) some portion of human anatomy, especially if he had to make the demonstration before others than the teachers in his college. This should be the more important part of the anatomical examination. And it would be well if it were, or could be, the only kind of anatomical examination before State licensing bodies. The anatomical part of the German *Staats-Examen* is of this nature—entirely practical. The candidate is required to demonstrate a "part" or one of the cavities of the body in the presence of at least two members of the examining board. Clearly, the student that has learned his anatomy from a book can have no place in such an examination. And inasmuch as the practitioner must practice on men rather than on books, this is the only proper method of finding whether the student has a working knowledge of anatomy. At the University of Virginia a part of the anatomical examination consists of actual demonstrations on the cadaver of several parts of the body. Whether such examination is required in any other American colleges we do not know.

It may be said, also, that topographical and morbid anatomy are much neglected in American schools; yet no one doubts their great importance. How many students, or medical men, can point out on the living subject the structures that lie beneath a given superficies? How many recent or old graduates can make a *post-mortem* examination as it should be made? Are not very many students graduated after hearing lectures on pathological anatomy without having had an opportunity of seeing specimens of the morbid affections of which they have heard?

Why should a student be required to listen to "twice told tales" in the anatomy room, without

having what he hears verified by anatomical demonstrations—apart from the actual work in the dissecting room? And does it not appear to be self-evident that a student can learn more from an autopsy, properly conducted, than from half a dozen didactic lectures on the pathology of a given disease?

These are questions that medical teachers, and examining boards, would do well to ask themselves.

HOT-AIR INHALATIONS IN PHTHISIS.

If one is to accept the statements of DR. A. L. STERN at the last meeting of the Section on Practice of the New York Academy of Medicine, the desideratum that has been so long and so fruitlessly sought for, a positive cure for pulmonary tuberculosis, has now been attained. This cure, Dr. Stern claims, is effected by Dr. Weigert's hot-air inhalation-apparatus, which he exhibited, and the use of which he explained. It is simple in construction, consisting of two copper cylinders, one within the other, and the air to be inhaled, which is heated by means of a Bunsen burner to a minimum temperature of 212°, and thus rendered perfectly aseptic, passes up between the two. The inhalation is to be used for four hours each day—two hours at a time—and it can be taken either in a sitting or reclining posture. It is advised, however, that when first commencing the treatment the patient should use the apparatus for thirty minutes only twice a day. The temperature of the air inhaled is gradually increased from 212° to as high a point as the patient can bear without suffering inconvenience; 482° being the highest temperature as yet reached in any case in these inhalations.

As a result of the hot-air inhalation, it is claimed, there is an acceleration of the pulse, while there is diminution in the frequency of the respirations, and inspiration becomes deeper. There is at first an elevation of the body temperature, the rise being from 1° to 2°; but after about an hour the temperature again subsides. Under the continued use of the inhalations the difficulty of breathing incident to consumption is soon markedly relieved, and there is at first a lessening, and then a total cessation of cough. There is at first an increase, then a decrease, and finally total disappearance of expectoration. All catarrhal symptoms disappear, as do the fever and night-sweats. There is a clearing up of the infiltrated portions of the lungs, and cicatrization of cavities, when these exist, is brought about; while the strength, weight and appetite of the patient gradually increase. The microscopic examination of the sputa generally shows at first an increase in the number of the bacilli tuberculosis, but afterwards there is a total disappearance of the bacillus, and a complete cure is effected. The shortest period in which total disappearance of the the bacilli has been noted is four months. This method of treatment, Dr. Stern said in conclusion, has now been employed in 150 cases, 50 of which were published in Vienna.

All this reads like a fairy tale, but it can be safely assumed that it will not be long before the method has been given a sufficiently extended trial to enable the profession to decide upon its merits. Dr. Weigert, the inventor of the apparatus, is a graduate of the College of Physicians and Surgeons of New York City, and is now residing in Berlin. We learn that Dr. Trudeau, of Saranac Lake, N. Y., has already used the hot-air inhalations with success in a number of cases. There is but little doubt that this method of treating phthisis will be extensively tried. It is to be hoped that the trials will be as careful as extensive, so that whatever of value there may be in the method will not be vitiated by and wrong conclusions drawn from improper and careless experiments and administrations.

ILLINOIS STATE MEDICAL SOCIETY.

The Thirty-ninth Annual Meeting of this Society will be held in Jacksonville, commencing on Tuesday, May 21, 1889, at 10 o'clock, A.M. Only two months elapse before the time specified, and it is important that all parties intending to attend or contribute to the interest of the meeting, should be actively preparing their work. The several State Medical Societies constitute the chief and proper basis of the National organization of the profession, and they should be cordially sustained by the most learned and active in all departments of medicine and surgery.

There is room in the State Society for the advocates of every legitimate interest to work, and interchange thoughts and facts with each other, thereby actively advancing the practical interests

and promoting the unity and influence of the whole profession. In a country as large as ours there is no method of complete and efficient professional organization, except that which begins with the municipal and county societies, progresses from these to the State, and from the State to the National; thus establishing the channels of universal intercommunication, and the opportunities for personal intercourse and of harmonious action. During the next two months the State Medical Societies of nearly all the States occupying the middle and northern part of the great interior valley of this continent will hold their annual meetings and we hope to see larger assemblages, a greater number of well prepared papers, and the results of more thorough scientific investigation, in all of them, than at any previous time in their history. The annual meeting of the American Medical Association will follow at Newport, R. I., commencing on the 25th of June. For four previous years that great National organization has held its annual meetings in this interior valley, with steadily increasing attendance. As the next meeting is to be held on the northeastern border for the first time since 1865, it is very desirable that all the State Societies of these great interior States should send full delegations to the meeting at Newport, thereby not only cordially reciprocating the favors of the past four years, but firmly cementing the bonds of friendship and materially adding to the scientific and practical interests of all.

THE MICROBES OF THE STOMACH.

This was the subject of a recent communication to the Académie des Sciences, by M. ABELOUS. In the fluid obtained by frequent lavages of his own stomach (empty) he has isolated 16 species of microbes, the morphological characters and action of which on alimentary substances, he has studied. The 16 species comprise 7 known microörganisms: the sarcina ventriculi, the bacillus pyocyanous, the bacterium lactis aërogenes, the bacillus subtilis, bacillus mycoïdes, bacillus amylobacter, and the vibrio rugula. Of the 9 species that have not been described, 1 was a coccus, and 8 were bacilli. All these microbes resist the action of artificial gastric juice for a time much exceeding the mean duration of stomach digestion, especially when the cultures were rich in spores. Each of these species of microbes has a more or less energetic action on certain alimentary substances: 10 attack albumen, 12 fibrin, 9 gluten, 10 cause the more or less complete transformation of lactose into lactic acid, and 13 form variable quantities of glucose from starch. But the most remarkable results, says Abelous, are seen in the action of all these microbes, at the same time, on an alimentary substance, especially when some saliva is added to the substance. Very rapid and very energetic decomposition sets in, with the evolution of gas and the formation of such products as leucin, tyrosin, indol, skatol, certain fatty acids and ammoniacal compounds. It is a fair inference that these microbes are very important factors in the process of digestion. The real theatre of their action, says Abelous, should be the intestine, not the stomach, since the duration of stomach digestion is not sufficient to allow the microbes to decompose appreciable quantities of alimentary material—if one may draw conclusions on this point from a study of artificial digestion.

EDITORIAL NOTES.

THE FLORIDA STATE BOARD OF HEALTH is now, so far as the legislative act is concerned, a reality; it is thought that the Governor will soon appoint the members of the Board. We have not seen a copy of the act, and do not know its conditions and provisions. The Board is to consist of three members, who will select from the State at large a secretary and an executive or health officer, the latter to be a physician. Whether the emoluments of the officers will be sufficient to warrant them in giving the proper attention to their duties we do not know. As a general rule such is not the case. Governments cannot expect to have offices properly filled so long as private enterprise is allowed to outbid the public services. Yellow fever cost the State of Florida millions of dollars last summer; it can never recover that money, but by paying efficient men to look after its health it may avoid the loss of millions in the future.

GENERAL PARALYSIS IN THE FEMALE, in relation to certain menstrual troubles, has been investigated by DR. GILBERT PETIT (*Thèse de Paris*, 1888), who concludes, from 59 cases, that the development of general paralysis in women

often causes menstrual troubles. These troubles are characterized sometimes by a sudden and definite arrest of the menstrual function, sometimes by marked irregularity of the menstrual periods. When there occurs a remission in the course of the general paralysis, the regularity of the menstrual function is re-established. The patients that have no menstrual trouble during the diffuse meningo-encephalitis, appear to resist the disease better than those whose menstruation is completely arrested or made irregular.

A MEDICO-LEGAL SOCIETY has been organized in Belgium. At present the only medico-legal laboratory that exists in Belgium is attached to the University of Gand. Dr. Vleminckx, of Brussels, is President of the new Society, and Dr. C. Moreau, of Charleroi, Secretary. The Society begins with a membership of 40 physicians.

A NEW PRIZE IN HYGIENE has been founded by the widow of the late Dr. Pier d'Hony, of Milan, in memory of her husband. The prize amounts to 1000 fr., which the Royal Italian Society of Hygiene will award for the best memoir on a question of industrial hygiene, special attention being paid to prophylaxis and precaution against disease, injuries, and accidents of any particular field or fields of labor. The memoirs must be in the hands of the Society by February 29, 1890.

TOTAL DESTRUCTION OF THE SPINAL CORD in mammifers by means of a stream of cold water, which prevents hæmorrhage, has been studied by M. GLEY. This method enables one to observe the different vaso-motor actions, independently of all nervous influence of central origin. When the cord has been destroyed in this way strophanthus causes a marked general vaso-constriction. By this method one may study the origin of the vaso-motor phenomena produced under the influence of certain medicamentous and toxic substances.

THE INFLUENCE OF TOBACCO-SMOKE ON MICROBES was the subject of a note by HAJECK at the meeting of a Vienna Medical Society on January 17. Basing his researches on the experiments of Tassinari, of Pisa, who showed that tobacco-smoke hindered the development of microbes, Hajeck looked up the vital statistics of Vienna, to see whether diphtheria is less prevalent among men, who generally smoke, than among women. He found that for the past four years the ratio of diphtheria cases in men to those in women was 1 : 2.8, or almost three times as many cases in women. This, he claims, bears out the experimental results of Tassinari. It may be suggested, however, that men, as a rule, lead more of an open-air life, and do not, so frequently as women, nurse children and others suffering from diphtheria. Israel showed that tobacco-smoke destroys bacteria-cultures. But it seems that Hajeck has based his conclusions on insufficient data. We should know the other habits of the males that had diphtheria, besides knowing whether or not they smoked.

SUBUNGUAL PULSE.—MARIO SACCHI describes in *Riforma Medica*, 1888, No. 224, a second case of subungual venous capillary pulse. The first case was seen by Giocco in a patient that had tricuspid insufficiency. Sacchi's patient was a woman 60 years of age, with relative tricuspid insufficiency, in which a systolic return current into the veins produced the venous capillary pulse.

THE UNIVERSITY OF PENNSYLVANIA is discussing the extension of its medical course from three to four years. At a recent meeting of the Board of Trustees Dr. William Hunt said, according to the *Philadelphia Press*:

As we raise the standard of the University it becomes necessary to lengthen the term of the medical course, and this will unquestionably be done before very long. In fact, it must be done. The University is one of the most prominent institutions in the medical history of the country. Its course at present provides for a compulsory study of three years in order that the student may obtain the degree of Doctor of Medicine, but our catalogue now recommends that students pursue a four years' course. The additional, or what may be called a post-graduate, year of study, is already provided for, and I think that the extra year will very soon be added to the present three years' term.

At the same meeting of the Trustees a new chair of Histology and Embryology was created, and Dr. George A. Piersol elected Professor. Dr. De Forest Willard was elected Professor of Orthopædic Surgery, which is practically another new chair, and Dr. Samuel G. Dixon was elected Pro-

fessor of Hygiene, in connection with which chair a laboratory will be established. It is announced that Mr. Henry C. Lea has given to the University $25,000 for the use of the laboratory of hygiene, conditioned on the raising of an equal sum by the University. Of this additional $25,000 a goodly portion has been subscribed or guaranteed, and it is hoped that the remainder will be speedily forthcoming.

ASSOCIATION NEWS.

American Medical Association. Fortieth Annual Meeting.

To be held in Newport, R. I., June 25, 26, 27 and 28, 1889.

The names and addresses of Section Officers and other officers of the Association are printed on advertising page 25.

Special Attention is called to the following Rules of the Association:

It shall be the duty of every member of the Association who proposes to present a paper or report to any one of the Sections, to forward either the paper, or a *title* indicative of its contents, and its *length*, to the Chairman of the Committee of Arrangements at least one month before the annual meeting at which the paper or report is to be read. It shall also be the duty of the Chairman and Secretary of each Section to communicate the same information to the Chairman of the Committee of Arrangements concerning such papers and reports as may come into their possession or knowledge for their respective Sections, the same length of time before the annual meeting. And the Committee of Arrangements shall determine the order of reading or presentation of all such papers, and announce the same in the form of a programme for the use of all members attending the annual meeting. Such programme shall also contain the rules specified in the By-laws and Ordinances concerning the consideration and disposal of all papers in the Sections.

No report or other paper shall be entitled to publication in the volume for the year in which it shall be presented to the Association, unless it be placed in the hands of the Committee of Publication on or before the first day of July. It must also be so prepared as to require no material alteration or addition at the hands of its author.

Every paper or address received by this Association, or by a Section, and ordered to be published, and all reports of Committees, and all plates or other means of illustration, shall be considered the exclusive property of the Association, and shall be published and sold for the exclusive benefit of the Association.

ORDINANCES.

Resolved, That the several Sections of this Association be requested, in the future, to refer no papers or reports to the Committee of Publication, except such as can be fairly classed under one of the three following heads, namely: 1. Such as may contain and establish *positively* new facts, modes of practice, or principles of real value. 2. Such as may contain the results of well-devised original experimental researches. 3. Such as present so complete a review of the facts on any particular subject as to enable the writer to deduce therefrom legitimate conclusions of importance.

Resolved, That the several Sections be requested, in the future, to refer all such papers as may be presented to them for examination by this Association, that contain matter of more or less value, and yet cannot be fairly ranked under either of the heads mentioned in the foregoing resolution, back to their authors with the recommendation that they be published in such regular medical periodicals as said authors may select, with the privilege of placing at the head of such papers, "Read to the Section of the American Medical Association on the day of 18 ." (Vide *Transactions*, vol. xvi, p. 40.)

Resolved, That no report or other paper shall be presented to this Association unless it be so prepared that it can be put at once into the hands of the Permanent Secretary, to be transmitted to the Committee of Publication. (Vide *Transactions*, vol xvii, p. 27.)

SOCIETY PROCEEDINGS.

Chicago Medico-Legal Society.

Meeting of March 2, 1889.

THE PRESIDENT, DR. E. J. DOERING, IN THE CHAIR.

CLARK BELL, ESQ., of New York, read a paper on

ELECTRICITY AND THE DEATH PENALTY.

(See THE JOURNAL of March 9.)

DR. FRANKLIN H. MARTIN said he did not feel competent to add anything to this paper, on the subject of execution by electricity. If, however, our criminals are to be executed at all there seems to be very little doubt in regard to the superiority of electricity over the gallows, especially if we take into consideration this interpretation of the law as given by the Commission appointed by the State Legislature of New York to investigate this subject, that is, that the State does not

claim the right to inflict punishment upon the homicide in a vindictive or retaliatory sense, or as in any degree as punitory or compensatory for the act committed; that is, we have no right, if this Committee interpreted the law correctly, to inflict other punishment than the death penalty upon our criminals. Electricity seems to me to be the force that should be applied, for this reason. In hanging there are two causes of death; one is the destruction of the nerves of organic life by the breaking of the neck and pressure upon the spinal cord, the other is from strangulation. We have both of these effects where the criminal is properly executed. If from the time the noose begins to tighten upon the neck of the criminal until death is declared by the physician in attendance, in any degree measures the time that the criminal must suffer, we certainly can see that electricity is superior. While this cord is tightening on the neck of the criminal and death is taking place, a current of electricity might pass through the criminal and do its work and pass to the sun and return, so that if consciousness ceases at the time the current passes through the criminal's spinal cord and brain much suffering must be prevented. The consideration of methods has been so thoroughly discussed by the paper that there is certainly very little left to say. In the first place the position of the criminal must be considered; and the electrodes that conduct the electricity to him must be properly applied; also the kind of current and its strength must be considered. The electrodes described in the paper, that is, large sponge electrodes, or electrodes 3x4 inches covered with sponge or chamois and saturated with salt water solution, must be the electrodes applied if we desire to prevent mutilation. If these electrodes are applied one at the top of the head and the other at the back of the neck, the part of the human system in which consciousness lies is destroyed immediately. Experiments immediately made on lower animals show that the structure of the brain with a powerful alternating current, is entirely destroyed. This is not the case, of course, with hanging, where strangulation is the cause of death. The current described as alternating, is possibly not thoroughly understood by all. It is not an interrupted current, as one statement in this paper might lead one to believe; it is a current that changes its polarity at every interruption; the current is a to and fro current. In a current from a Westinghouse electric light dynamo the polarity is changed 600 times in a second, and the current is deadly in the extreme. Although it seems almost presumptious for any one to bring a question up at this time after the opinion expressed by Mr. Edison, still there is a question with regard to the proper apparatus for the execution of criminals. It seems that the dynamo, engine and apparatus necessary for execution by the method described in this paper can be obtained only at an expense of $5,000. The kind of electricity that is most deadly, and we have a great many examples of its action, is the current in the lightning stroke; that is, the static electricity, or the Franklinic form of electricity. While it is the same electricity, probably, as that we receive through our dynamos, it is one of very high electro-motive force. A machine with a 54-inch wheel and an apparatus that would cost in the neighborhood of $500 will give an instantaneous shock that will prove as deadly, without doubt, as the alternating current generated by a $5,000 apparatus. In adopting electricity as the mode of execution there are certainly grounds yet for further experiments.

DR. PLYM. S. HAYES: There are several points of interest in regard to death by electricity that I have not seen mentioned in recent literature on the subject. Decomposition takes place almost immediately after death by lightning. Prof. Richman, of St. Petersburg, a contemporary with Franklin, had in his laboratory a metallic ball which passed, by means of a metallic conductor, through the ceiling and terminated on the roof in a sharp point. When not using this electricity he connected this ball, by means of a chain, to the earth. When he wished to collect the electricity he would disconnect the chain. One day he passed within 18 inches of this ball and the current jumped across and he was killed, and so rapidly did decomposition set in that he had to be buried almost immediately. Again we find that when death occurs from lightning-stroke *rigor mortis* does not occur. Again we have instances in which the person is fixed immovably, sometimes standing.

In looking up the subject for life insurance I found there were one or two men in the city of Chicago who had taken a current of electricity of sufficient strength, under ordinary circumstances, to kill a man, but who escaped with their lives. Again, I found that if the current was gradually increased and then as gradually diminished, a man could take a tremendous current, one which would usually have killed him, but being a continuous current of great evenness gradually increasing and diminishing, the man escaped without injury. There is a point mentioned in this paper, and which I have seen mentioned in some of the medical journals. One journal stated that 500 volts would kill. And in the paper that has just been read the point has been raised in regard to the number of volts necessary to be used, and it is recommended that from 1,000 to 1,500 volts of current be used. Now they say nothing of the ampèrage of the current. It seems to me that ampèrage cuts just as much of a figure as voltage. In the case of static electricity we find that between the conductors of a machine, where we can get a spark of 6 or 7 inches, we will have an electro-motive force of not less than 3,000 volts, and

yet there is not one of us in this room but can take that through his body without injury, because there is no ampèrage to speak of. But if the spark jumps a foot then it is decidedly more dangerous; but even then it depends upon the condensers (Leyden jars) connected with the machine. We know that we can take a shock from a machine throwing a spark 7 inches, and yet with the same shock, where more volume (ampèrage) is given, we know that the result would be fatal. There is an induction coil in England that gives a spark of not less than 24 inches; it is estimated that that would destroy life instantly, and it is a dangerous plaything, to say the least.

To use the frictional machine for the death penalty would not be advisable because, even with the best frictional machines produced at the present time it would be impossible at certain seasons of the year, during the summer especially, for weeks at a time, to get a sufficient current to carry out the penalty. I think when we speak of voltage we should have ampèrage. In the arc light the ampèrage is great and we have a voltage comparatively low as compared with the voltage of the static electric machines.

I received at one time a current from 1,140 cells of the gravity (Callaud) battery. It was before the days of electric light in Chicago, except that obtained by the battery, and a gentleman was very anxious to use a lantern he had imported from England, in which the electric current was to be employed; so we worked up in the top story of the Western Union building one evening and had 1,140 of their battery cells connected together. We got an arc light of 3 inches; that is, the carbons of the lamp were separated 3 inches after the light was started, but the light was so faint that you could look at it with the naked eye, and it probably did not give more light than one of the Edison burners here. I accidentally got hold of the two poles. I was shocked two or three times, the muscles contracted very rigidly, and I had some deep burns on my hands for several days, but beyond that no injury was done to me, and I probably received not less than 1,000 volts through my person. If you say a man has taken a thousand volts, you might as well say a man has eaten a mile of sponge cake; well, he could eat a mile of cake if it was cut thin and narrow enough. And so it is with the electric current, there are two dimensions; there is the electromotive force, the power of overcoming resistance; and there is the ampèrage, the quantity of volume. Or, the voltage is velocity, while ampèrage is momentum, that is, it is velocity with mass added to it. Now, a cannon ball may have the same velocity as a musket ball, yet a cannon ball will do many more times the damage that a musket ball will do. The difference is not in the velocity but in the momentum. It seems to me one factor has been omitted in this discussion; ampèrage has not been taken into consideration in connection with the voltage. Of course, in these electric light machines there is a certain amount of ampèrage, so there will be no difficulty about the criminals being duly executed by the use of any of the instruments that have been suggested in the paper read to-night.

Dr. F. C. Hotz: As physicians we are not interested in killing people, no matter whether it is done in an apparently brutal manner or in a very elegant manner, but we are interested in allaying suffering. Therefore the question that concerns us, is simply whether the criminal suffers during the hanging or during the time that his head is being cut off, or while an electric current is passing through his body, and by which of these methods does he suffer the most. Some of the speakers seem to take it for granted that hanging inflicts a great deal of suffering upon the person. I don't speak from personal experience, but from what I have read in articles written by good observers and gathered from people that had been called back to life after a rope had been strung around their necks, I think this is a wrong impression. What does suffering or pain presuppose? A man can only suffer as long as he is conscious; whenever our consciousness is gone we do not suffer. We all know that when we give a man chloroform we can inflict any amount of injury on his body and he will not feel it; he will not suffer. In putting the rope around the man's neck, as he is executed in this country, and dropping him down so that his weight tightens the rope quickly, often dislocating the neck and acting directly upon the centre of respiration, the arteries supplying the head are so quickly compressed that the arterial supply is cut off. The fact that the pulse is beating in the wrist does not prove that a person during that time is feeling anything. In the half of a second or a second his consciousness is gone and there is no more feeling. In using the guillotine the arterial supply is cut off at once, and if there is anything that will instantly remove consciousness thoroughly and thereby save the criminal any suffering, it is the guillotine, while the electric current, I understand, has to be applied from fifteen to twenty-five seconds. That is taking a long time to kill a man compared with the guillotine or a rope! I think that these recommendations are based upon a wrong foundation; I do not think there is any suffering or any cruelty connected with the act of hanging. The suffering of the criminal is all done before he drops down, physically and mentally. The recommendation that these executions ought to be done privately, without the presence of any one except the jury, etc., and without even the criminal being notified of the exact moment when it is to be done, is all proper and well. But the electric apparatus is no improvement on the present *modus operandi*. It

requires a costly and cumbersome machine which will seldom be used; and probably, when one wishes to use it, will not be in order. I would suggest that if the State of Illinois wants to improve upon the mode of execution, let us go back to the very classical way the old Greeks did this thing: send the criminal a glass of wine fully charged with prussic acid, with the compliments of the sheriff.

DR. N. S. DAVIS, SR.: Mr. President, I only rise to add a word to what has been said about the common impression as to suffering by hanging. I think the most reliable evidence we can get on the subject is from those who have given much attention to it. Taylor, in his "Medical Jurisprudence," and other authors, agree that the consciousness of the individual following the drop is just like a flash of lightning before the eyes, and that is the last consciousness he has; but the idea in the community is that the individual is suffering as long as his muscles are contracted and his body is moving, or until his pulse stops. You may just as well say that an epileptic man is suffering merely because he is in violent convulsions; when the fact is that he has not the slightest consciousness after the first impression reaches his throat until it passes off; although he is in violent contortions, yet it passes away, and when he comes to consciousness he has not the slightest recollection of suffering at all. So a drowning person, if kept beneath the water, would have no consciousness beyond a few seconds, unless he is skilled and refuses to take breath. The mouth and air tubes fill with water the first breath he takes in and the oxygen can no longer oxygenize the blood, and it is but a very few seconds before he is unconscious, though he may still make muscular movements. We all know that a chicken's body hops about for a considerable time after its head is cut or wrung off, but we do not imagine that the chicken is suffering. I make these remarks merely on account of the error that is prevalent about the amount of suffering from hanging. It is said that they make mistakes in adjusting the rope, but want of skill might cause mistakes by any method. Some think that the neck is usually broken, but reliable investigations show that dislocation or breaking of the neck takes place only in a small minority. We know that it takes place in some, but in less than one-quarter. In some the circulation and respiration are cut off and the neck broken, all three, but the majority are rendered totally unconscious and die by simply shutting off the air and stopping the circulation. A man in England took up the trade of exhibiting before popular audiences the practice of hanging, and carried it on for a considerable time by hanging himself, to show the process. He did this successfully and made a profitable business of it for some time, but he finally let himself go a little too far in bringing the pressure upon the front part of the neck, and actually lost his consciousness completely. The audience supposed it was all play and let him stay there until he was permanently dead. This put an end to that class of exhibitions.

DR. G. C. PAOLI: While I admit that electricity is an improvement on hanging, which is a relic of barbarism, I abhor capital punishments. There is not at present a single nation in the world that can boast of Christianity, with the exception of individuals, but the time is not far distant when capital punishments will be abolished. The question now is, which is the best, the most humane method of destroying life. In my opinion, subcutaneous injections of aconitia. The experiments made on animals during the last twenty years have convinced me that this alkaloid produces death by paralyzing the action of the heart, and consequently the individual dies a painless death in a few minutes.

DR. J. C. HOAG: Although I was puzzled before coming here to appreciate the necessity of any change in the mode of administering the death penalty, I am still more so after having heard this paper read. One point in particular puzzled me very much: The writer says that they make no claim that the State has any right to administer the death penalty in a retaliatory or punitive manner. Now, if there is nothing of retaliation or punition in capital execution I think we may as well abolish it altogether. To my mind capital execution is executed not so much to rid the State of a dangerous member of society as to deter others from the commission of similar atrocities. Then again, as has been stated, the administration of the death penalty by means of electricity is likely to be both a cumbersome and expensive innovation. The administration of the penalty by means of poisons I think is open to very grave objection; that is, if easy means of poisoning are made known to the public it will certainly have a tendency to increase suicide. The public, becoming familiar to a greater or less extent with these powerful agents, will know what to choose, and they will no longer resort to the uncertain and unpleasant rat poison, but they will at once adopt the poisons approved by the State. Again, I do not know that it is necessary to divest the death penalty of a certain amount of horror. If they that are obliged to administer it are familiar with the fact that the criminal at once loses consciousness, I do not know that it is necessary to relieve the public mind from all apprehension on this subject. I think something might be done in the way of making the death penalty a little less attractive. Of course there is no doubt of the potentiality of electricity to dispatch the criminal *tuto cito et jucunde*, but I do not think it is necessary to execute him *pleasantly* if the means adopted be safe and rapid. With regard to the various modes of execution, I have long thought that there was

nothing better than the guillotine. Hanging is well enough if the rope does not break, but there seems to be very little difficulty in execution by means of the guillotine. Although I have never seen an execution by this means I have examined the guillotine, and always thought that it was a rapid and satisfactory method.

DR. J. E. STUBBS: I wish to place myself on record as being in favor of hanging in preference to execution by electricity. It has been remarked by others that the victim becomes unconscious almost immediately in hanging; and I think it is the experience of those that have fallen from any considerable height that at the moment they lost a firm footing, consciousness almost immediately ceased, and I judge it is the same way in hanging, when the drop falls consciousness ceases, only a sensation of falling is realized, and the sudden jerk ends the physical suffering instantly. The pain is the mental dread of yielding up life. I cannot see that there would be any improvement in death by electricity, for it is not certain whether electricity kills in five seconds or half an hour. Some persons have taken large quantities of electricity and have lived; but I do not know that we have any record of a being legally hanged for half an hour and coming to life again. We have no positive record of man having consciousness after he had reached the end of the rope in the drop from the gallows: Until a better way of executing criminals has been demonstrated I am in favor of hanging.

DR. GEO. E. WEBSTER: With regard to whether the criminal loses consciousness or not until after the heart ceases to beat, it is a well-known fact that in cold blooded animals the heart may continue to beat for several hours after removing it from the body. In warm blooded animals the heart beat is automatic and it will continue to beat a long time after removal. I have succeeded in keeping a mammalian heart beating for a number of hours after removing it from the body. So that the fact that the heart is beating, and that we can feel the pulse, does not indicate life or consciousness. As to the point brought up in regard to drowning: it is a well-known fact, and there is one instance on record of an individual who lived after being submerged for fifteen minutes. During the 15th century there was a law in Germany to punish the crime of infanticide by death, by drowning. The law being that the woman should be placed in a bag with a cock and a cat and drowned, being submerged for fifteen minutes. A case of this kind occurred in which there was spontaneous recovery after the woman had been submerged fifteen minutes.

THE WESTERN NORTH CAROLINA MEDICAL COLLEGE, it is said, is the name of a new medical college to be established in Asheville.

Medical Society of the District of Columbia.

Stated Meeting, November 28, 1888.

SWAN M. BURNETT, M.D., VICE-PRESIDENT, IN THE CHAIR.

Dr. George Woodruff Johnston presented microscopic slides of a case of *Supposed Primary Cancer of the Fallopian Tubes.*

Dr. J. Taber Johnson presented the specimen and read the history of a case of *Cancer of the Ovary.*

DR. D. S. LAMB presented the specimen and gave the notes of the necroscopy of a case of

CANCER OF THE RIGHT KIDNEY.

Dr. N. S. Lincoln gave the following history of the case: The man first consulted him in the early part of the summer of 1888 for pain in the right side, irritability of the bladder and bloody urine. He sent a specimen of urine to Dr. Schæffer for microscopical examination, and he reported the presence of blood, pus and other elements of malignant disease. There was a tumor, about as large as the fist, on the right side, which descended about half way to the bladder. There was pain in this region which he had had since January, 1888. He diagnosticated malignant disease, and told the man's family that it was necessarily fatal. Dr. J. Ford Thompson was then called in consultation and the patient was examined under chloroform. The tumor was now quite movable, and Dr. Thompson recommended its removal. There was no enlargement of the left kidney noticeable. Dr. Lincoln did not agree to the operation proposed by Dr. Thompson because be believed the tumor to be malignant. Dr. D. Hayes Agnew, of Philadelphia, was then summoned. He agreed with Dr. Lincoln as to the malignancy of the tumor and would not sanction an operation. The man gradually failed and died. The growth was movable when Dr. Thompson examined it, and, consequently, seemed favorable for an operation.

Necroscopy on Horace S. J., white, æt. 61, who died Nov. 3, 1888. Made for Dr. N. S. Lincoln. Old pleuritic adhesions both sides; some hepatization in lower lobes of lungs; several small deposits of obsolete tubercle; some pus in bronchial tubes. Heart small; slight atheroma of aortic valve and aorta. Liver small; showed several cancerous nodules, from very small size to 1.5 inches in diameter; some softened in center. Spleen small. Pancreas normal. Greater omentum contained several cancerous nodules, size of shellbarks, and softened in center. Stomach normal. Duodenum firmly adherent to pelvis of right kidney and contained in its wall several nodules of cancer. Scybala in large intestine. Right kidney about twice natural size, lower half a mass of soft cancer, much of it broken down; débris in recent state was mixed with blood-clot

and contained about ten calculi, large and small, the largest one having branches. Upper half of kidney converted into a sac, with wall of varying thickness; in recent state sac contained purulent urine, and was no doubt formed by pressure of subjacent tumor on ureter. Capsule of kidney was everywhere adherent, and fatty capsule contained several masses, size of shellbarks, softened in center. Pelvis dilated and ulcerated. Upper part of ureter thickened and showed small cancer nodules. Right suprarenal capsule enlarged and cancerous. Left kidney weighed 7 oz.; showed several cancerous nodules, superficial and deep, some of them softened; papillæ swollen, with minute cysts of surface; pelvis dilated from pressure of adjoining tumor of kidney. Bladder and prostate normal. Inferior vena cava dilated and opposite kidney contained blood-clot adherent to wall. Suprarenal vein also contained blood-clot. Abdominal aorta atheromatous. Connective tissue along right side of lumbar vertebræ thickened and firm. Some small exostoses on bodies of corresponding vertebræ.

DR. E. M. SCHÆFFER read a paper on

THE MICROSCOPICAL DIAGNOSIS OF CANCER.

(See page 403.)

DR. J. FORD THOMPSON took special interest in this subject of diagnosticating cancer by the microscope, as well as in the case presented to-night. He could not agree with Dr. Lincoln in refusing to sanction the operation, because the diagnosis of malignancy had been given. A large percentage of tumor removed are malignant; two have been reported to-night of which one is well and the other is rapidly recovering. Dr. Lincoln's case looked favorable for a nephrectomy as the tumor was movable. The uterus or breast is removed for cancer if the surrounding tissues are not too much involved. Hysterectomy for cancer is comparatively favorable; he had operated on a case two years ago, and the woman is now doing well. If the complications had been found or known to have existed he too would have opposed an operation; but these were only found at the autopsy. He could not agree with Dr. Lincoln in excluding all cases of nephrectomy because of malignant disease. He had never seen a case in which he would rely upon the microscope for the detection of malignant cells in any fluid of the body. He was not alone in this opinion as most surgeons consider that an absolute diagnosis is impossible. In malignant diseases of the bladder surgeons do not rely upon urinary analysis. It is impossible to make a correct diagnosis from decayed cells found in the fluids of the body. The same is true of the stomach and intestines when the fluids and cells are discharged. He had accepted such a diagnosis once and that was not right. The recent European experience should teach us that it is impossible to diagnosticate with certainty a cancerous growth even when it can be seen and felt by distinguished surgeons and pathologists.

DR. LINCOLN had not based his opinion of malignancy on the cancer cells as much as on the patient's general condition, with the tumor and cachexia. From the mobility of the growth he was inclined to agree with Dr. Thompson, but he was compelled to accept Dr. Schæffer's report. The urine may not present cancer cells at all times.

The discussion was continued until the next meeting.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR REGULAR CORRESPONDENT.)

The Hospital-Ship Queen Victoria—Lady Students of the St. John's Ambulance Association—Sulfonal—Home for Trained Nurses in Egypt—Iodoform and Tar—Administration of Nitrous Oxide and Ether—Tying the Lingual Artery in Excision of the Tongue.

The hospital-ship *Queen Victoria* which has been built at Great Yarmouth as a memorial of the Jubilee, is to cruise in the North Sea, for the purpose of rendering medical and surgical assistance to the fishermen who are engaged in those waters. The vessel was taken into Osborne Bay, where the Queen and the Empress Frederick drove down through the grounds to the beach and viewed the vessel, after which they witnessed a number of experiments with a new ambulance stretcher. The Empress Frederick and her daughters afterwards went on board the ship and were shown all over her, and the Empress kindly promised to send a number of books for the library. Last year three vessels which had been sent to the North Sea had 153 in-patients and 7,350 out-patients. The surgery and hospital of the new vessel is fitted up with every convenience likely to be required.

The lady students of the St. John Ambulance Association, in Birkenhead, outnumber the gentlemen, it appears, in the proportion of 153 to 144. An excellent account is given by the examiner of the pupils who, according to his report, were found to be extremely well up in practical work, and all showed great interest in bandaging, removal of injured on stretchers and arrest of bleeding. In addition to practical work, the ladies were given many questions in physiology, etc., and the answers were readily and correctly given. Lest any one should suppose that the ambulance classes are a mere whim and pastime it may be noted that during the last six months of last year the certificated members in Birken-

head were reported to the Secretary to have attended personally to the following casualties: Broken thigh, 3 cases; broken upper or lower arm, 5 cases; broken leg, 4; running over, 3; concussion of brain, 2; apoplexy, 2; pistol shot, severance of palmar arch, and man crushed between carriage step and platform of railway. These are in addition to what are called "police cases," which have a special report book of their own. The Association has now lived long enough to silence all scepticism regarding the substantial benefits of its noble labors.

Sulfonal still continues to attract considerable attention and its use is becoming general. A number of cases of the most varied affections have been treated with sulfonal where there has been nervous insomnia. In 65 per cent. of these sleep was produced within three hours. In the nervous cases this action was even more pronounced, for in 90 per cent. of them the indications were successfully fulfilled. Sulfonal is consequently recommended as a good hypnotic, especially in doses of 15 to 30 grains. Where the insomnia is the result of some direct organic disturbance its action is more or less uncertain. It has the advantage of having no smell and no taste, and it does not affect either the patient's temperature, pulse or respiration, and is consequently to be preferred to chloral or morphine, however, in all cases where there is any heart weakness it is to be guarded against. In other respects the insignificant disturbances which it occasionally produces are not of sufficient importance to be counter indications for its use. Some observers believe sulfonal to be preferred to all other hypnotics. It must be given, as a rule, one hour, at least, before it is desired that sleep should be produced. It has been found quite unreliable when cough or neuralgia are the cause of the insomnia.

Sir Sydney and Lady Waterlow have left London for Egypt. Sir Sydney is proceeding to Cairo for the purpose of permanently establishing the "Home for Trained British Nurses," for which he, in January, 1888, obtained the permission of His Highness, the Khedive. Some nurses have already commenced work in Cairo, and a committee has been formed for the proper management of the institution there. The committee consists of Dr. Greene Pasha, Dr. Milton, with Dr. Sandwith as honorary Secretary.

Experiments have been made with iodoform combined with tar, the notion being that the latter, an oily substance, would diminish the volatility of the iodoform, which is looked upon as the cause of the diffuse erythema caused by the latter, and also because tar ofter brings gangrenous and septic ulcers into a healthy condition. In the preparation used the particles of tar and iodoform are so intimately mixed together that only hyaline plates can be discovered when the new preparation is examined under the microscope. The characteristic crystals of the iodoform cannot be discovered at all. The preparation can be very easily pulverized and has a peculiar spicy odor, not at all disagreeable, besides which this odor is so weak that it is only perceptible when the nose is applied to large quantities of the compound in question. If, however, it is required to disguise the slight scent alluded to, it may be done by adding a small quantity of styrax liquidus to the powder and rubbing both substances together. The disease to which the new preparation of iodoform has been applied are soft ulcers, as a dressing after the opening or excision of suppurating or strumous inguinal buboes, gummatous ulcers, and ulcerations of the foot. It is applied thus: The preparation is brushed over the part, which is then covered with a thin layer of wadding, over which an ordinary dressing is applied. The dressing is changed every twenty-four or forty-eight hours. In special cases it has been changed twice a day, for instance, in soft ulcers where the suppuration is very profuse.

Under the title of "Select Methods in the Administration of Nitrous Oxide and Ether," Dr. Frederic Hewitt, of the London Hospital, has supplied a condensed manual for practitioners and students. After some suitable introductory remarks, precise directions are given for the administration of nitrous oxide, for the administration of ether and of nitrous oxide with a small quantity of ether, as well as for the administration of nitrous oxide as a preliminary to etherization.

Dr. F. B. Jerrett, in a paper describing his method of tying the lingual artery in excision of the tongue, especially refers to cases of excision of the tongue with scissors, where the hæmorrhage was often very severe, and even alarming. Moreover, his method, to a great extent, prevents blood finding its way into the air passages, with the subsequent danger of septic pneumonia. Again, in removing the tongue with the scissors, if the artery was not seized directly it was divided, it often retreated, and the bleeding point was with difficulty seen and secured. He had had opportunities of putting the method into practice and had found it effectual. The operation was performed by drawing the tongue well out of the mouth, the frænum and mucous membrane of the floor of the mouth around the half or whole of the tongue if the entire organ was to be removed, was divided in the ordinary way, with scissors slightly curved upon the flat. The tongue next being drawn well forward and upwards, a few fibres of the genio-hyo-glosus muscles were divided and torn deeply through with the fingers. An ordinary aneurism needle threaded with No. 4 Chinese silk was thrust deeply down between the two genio-hyo-glossus muscles, the point being directed downwards and backwards, until it was opposite the second molar tooth. The

point was then turned outward and brought out of the incision previously made through the mucous menbrane, unthreaded and withdrawn. The ligature was next tied firmly and as deeply as possible. A pair of clamp forceps were passed down and made to catch the tissues on the distal side of the ligature, to prevent the possibility of the ligature being snipped as the tongue was being removed. If necessary, the same was done on the opposite side. G. O. M.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

THE PARIS SCHOOL OF MEDICINE—I.

I propose describing as briefly as possible the Paris School of Medicine and the subjects that are taught in it. Those who have not visited this city for the last 15 or 20 years, will scarcely recognize the quarter in which the building of the School of Medicine stands, as the place has become completely transformed. The old building has been considerably enlarged, and fitted up with laboratories for carrying on various researches. The old Hospital des Cliniques which stood opposite has been razed to the ground and the Ecole Pratique has been built on its site. It contains eight pavilions for students carrying on dissection. Each pavilion consists of sixteen tables, and each table supplies room and furnishes material gratuitously to five students.

The degree of Doctor of Medicine in the University of France is conferred by the Faculties of Paris, Montpellier, Nancy, Bordeaux, Lille, and Lyons, under regulations laid down by the Government. The first three are Schools of Medicine, the others are mixed Faculties of Medicine and Pharmacy. There are three Ecoles de plein exercice, Nantes, Marseilles, and Toulouse. There are preparatory schools at Algiers, Amies, Angers, Besançon, Caen, Clermont-Ferrand, Dijon, Grenoble, Limoges, Poitiers, Reims, Rennes, Rouen, and Tours. The studies necessary for obtaining the degree of M.D. extend practically to about five years. During the first three years the student may attend either one of the Faculties, or an Ecole de plein exercice, or one of the Preparatory Schools of Medicine and Pharmacy. The studies of the fourth year can only be pursued in a Faculty or in an Ecole de plein exercice. Before he begins his curriculum the student must take out sixteen inscriptions, but before doing so he must present the diplomas of Bachelor of Letters and of Sciences. Foreign students, however, are admitted to what is called an equivalence of grade in respect to these preliminary studies, that is, certificates of analogous private studies and of examination of arts elsewhere. The following is the course of study through which the student has to pass: First year: physics, chemistry and natural history. Second and third years: anatomy and physiology. Fourth year: operative surgery and pathology. Attendance on hospital practice, which is also obligatory, commences after the eighth inscription and continues through the remaining period of study. There are five examinations, the first after the fourth inscription and before the fifth. The subjects of the five examinations are as follows: First examination: physics, chemistry, and natural history, in their application to medicine. Second examination: first part, dissections, anatomy and histology (oral); second part, physiology (oral). Third examination: first part, performance of operations, external pathology, midwifery, and operative surgery (oral); second part, internal pathology, or medicine, and general pathology. Fourth examination: hygiene, forensic medicine, therapeutics, materia medica, and pharmacology. Fifth examination: first part, clinical surgery and obstetrics; second part, clinical medicine and practical demonstrations in pathological anatomy. After the five examinations, the candidate must present a thesis on a subject chosen by himself. This he may pass at any time after having pursued the fifth examination, and must be printed at his own expense. But to entitle him to his diploma he must present a certificate of having passed a curriculum in the hospitals and of having attended them regularly for two years. Candidates for the diploma of Officier de Santé (an inferior grade), must also take out sixteen inscriptions, the regulations regarding which are the same as for the degree of doctor. There are six examinations for this grade. First, in physics, chemistry, natural history, and elementary anatomy (bones and ligaments). Second, in descriptive anatomy and physiology. Third, in medicine and surgery. After the sixteenth inscription, which takes place at the end of the third year, there are three final examinations (examens definitifs). First, in dissection, anatomy, and physiology. Second, in operative surgery, medicine, surgery, therapeutics, and materia medica. Third, in clinical medicine, surgery, and midwifery. No thesis is required. Foreign medical practitioners desirous of permission to practice in France as Officiers de Santé, must present their diplomas to the Secretary of the Faculty of Medicine. If the Council of the Faculty report favorably the permission is granted. Foreign practitioners wishing to obtain the degree of Doctor of Medicine must pass the last two examinations and present a thesis, paying full fees for all the examinations they would have had to pass had they gone through the ordinary course. Exception may be made in the case of medical men of acknowledged eminence, to whom the Faculty may at once grant all the privileges of the doctorate. Foreigners may be admitted to any of the French Faculties on presenting their certificates of study in their own countries and paying

an entrance fee of £4. The total cost of fees for the whole curriculum of medical study, and for the whole series of examinations and the diploma of M.D. of the University (during five years) amounts to 1,360 francs. Officiers de Santé pay 450 francs for their examinations.

The School of Medicine in Paris is open to all who wish to attend the courses and take the degrees. Great facilities are afforded to foreign students for the prosecution of their studies, all lectures being given gratuitously, and no payment being required for hospital attendance. For dissections, however, a payment of 40 francs is expected from each student. The instruction in the Faculty is given by the following Professors: Drs. Farabœuf, Anatomy; Mathias Duval, Histology; A. Gautier, Medical Chemistry; Baillon, Natural History; Gariel, Medical Physics; Regnauld, Pharmacology; Dieulafoy, Internal Pathology, or Medicine; Duplay, Practical Surgery; Lannelongue, Surgery; Hayem, Materia Medica and Therapeutics; Cornil, Pathological Anatomy; Laboulbène, History of Medicine and Surgery; Tarnier, Midwifery; Proust, Hygiene; Brouardel, Forensic Medicine; Strauss, Comparative and Experimental Pathology; Germain Sée, Potain, Jaccoud, and Peter, Clinical Medicine; Richet, Verneuil, Trelat, and LeFort, Clinical Surgery; Budin (pro tem.), Clinical Midwifery; Grancher, Diseases of Children; Charcot, Diseases of the Nervous System; Panas, Clinical Ophthalmology; Ball, Mental Pathology; Fournier, Diseases of the Skin and Venereal Diseases.

Auxiliary courses are given by Agrégés, or Sub-Professors, on all the above named subjects. Practical instruction is also given under the guidance of Agrégés who are styled Chefs de Travaux and Chefs de Laboratories. The Faculty of Medicine possesses laboratories for the various branches of medical scinece, and there are also laboratories for practical instruction at several of the hospitals.

A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Simple, Non-tubercular, Non-metastatic Abscess of the Lungs—Pigmentation of the Body by Arsenic.

At the last meeting of the Section on Practice of the New York Academy of Medicine, Dr. S. Seabury Jones read a paper on *Simple, Non-tubercular, Non-metastatic Abscess of the Lungs.* This was a subject, he said, which had received but little attention. The affection, however, was comparatively rare, and Trousseau in the first twenty-five years of his hospital practice did not meet with a single case, though he afterwards reported two cases. Laennec met with only five cases in several hundred autopsies on those who had died of pneumonia. In 1848 Robert Graves reported six cases. When Dr. Jones encountered his first case, now nine years ago, he was unable to find any reference to the subject whatever in any of the text-books to which he had access. Later some attention was given to it in Pepper's System of Medicine; but in von Ziemssen it is referred to only as a sequel of croupous pneumonia. Simple abscess, he thought, would doubtless occur more frequently than it does were it not, as Stokes has pointed out, that the lungs are provided with such an admirable natural system of drainage through the bronchial tubes.

Practically speaking, it is liable to be met with in one of four forms. The first is that in which the symptoms are very obscure from the beginning, and remain so until there suddenly occurs a discharge of purulent matter. In the second form the symptoms resemble those of pleurisy with effusion, and in the third those of pulmonary tuberculosis. The fourth is that associated with the variety of pneumonia which advances slowly from one lobule to another, or is characterized by a tendency to skip from one lung to the other. Dr. Jones said he had personally met with all the forms except the first, but undoubted cases of this variety, occurring in the experience of others, were on record. Abscess of the lungs is always accompanied with a depreciation of the general health, and alcoholism is apparently a prominent factor in its production. It is an affection confined to no particular age, and Dr. L. Emmett Holt, of New York, has reported in the *Medical Record* a case that occurred in an infant only 3 months old.

Dr. Jones' first case was in a young man 17 years of age, of rather delicate health, and affected with lateral curvature of the spine, who came under observation September 25, 1879. While in his usual health he was attacked with severe pain in the left side, accompanied with cough, but no expectoration. At the time he was seen the pulse was 120, and the temperature 102°. Anteriorly there were no abnormal physical signs, but posteriorly, in the subscapular region on the left side, there was complete dulness on percussion, although no râles whatever could be found, and there was still no expectoration. About October 1 a large abscess of the tonsil developed, from which pus discharged freely, and subsequently there was a discharge of purulent matter from the lungs through the mouth. After this the patient made a rapid recovery, and had no further trouble subsequently. He was led to consider this as a case of simple abscess of the lungs, *first*, on account of the short time intervening between the appearance of the first symptoms and the discharge of pus; *secondly*, on account of the occurrence of the tonsillar abscess, showing a tendency

to the formation of abscesses in the system; *thirdly*, from the rapidity of the recovery; and, *fourthly*, because of the dulness found on physical exploration being exclusively posterior.

He was afterwards confirmed in his opinion in regard to the nature of the case by the report of a case published in the *Lancet* by Dr. Henry Payne in 1882. The patient, a man 23 years of age, was treated for some time, but without relief, for pleuritic effusion, and was afterwards supposed, from the nature of the symptoms, to have empyema. Accordingly, an incision was made just above and parallel to the seventh rib in the anterior axillary line. Upon opening the pleura there was a very profuse hæmorrhage of dark venous blood, which could be arrested only by the injection of perchloride of iron solution. About 15 ozs. of pus escaped, and a drainage tube was inserted. There was a very profuse discharge, which in a few days became fetid. The patient continued to do fairly well for nearly a week, when the temperature suddenly rose to 104° and he was seized with violent pains in the chest, and within twenty-four hours after this he died. The autopsy showed the whole of both surfaces of the left pleura adherent, without a drop of fluid in the sac. The external opening made in the chest wall led into a large, irregular cavity situated in the centre of the lung, which was in a state of hepatization. It was therefore seen to be a case of pneumonia, terminating in the formation of an abscess.

Dr. Jones' second case was observed in 1886. The patient was a male, 40 years of age, who was attacked, like the first, with tonsillitis with the formation of an abscess. The suppuration was accompanied with fever, which was ushered in by a chill, and a considerable discharge of pus followed the opening of the abscess. Subsequently he had another severe rigor, followed by high temperature, and coughed up a cupful of pus and dark-colored blood. Still later there was another discharge of similar character, and the matter coughed up was found on microscopic examination to contain the pneumococcus of Friedländer. In this case there was an area of dulness at the base of the right lung, with local tenderness on pressure.

The third case was one in which the symptoms resembled those of tuberculosis. The patient was first troubled with palpitation of the heart, which he believed to be due to gastric derangement. There was a considerable loss of flesh (amounting to 40 lbs.), and the temperature ranged from 100° to 102°, while physical examination revealed an area of dulness in the right subclavicular region. A general tonic treatment was prescribed, and the patient was sent to the country for the summer. In July he coughed up a considerable quantity of pus and dark-colored blood. Afterward the expectoration was profuse, and he suffered from night-sweats and became greatly emaciated. He then began to improve and, as repeated examinations of the sputa failed to detect at any time the presence of the bacillus tuberculosis, the case was regarded as one of simple abscess of the lungs, and a favorable prognosis made. In a few weeks the patient regained his usual health and weight, although a small cavity still remained in the lung. Two years afterward he was seen, in excellent health, and no sign of a cavity could be detected.

He next cited a case reported in the *Lancet* by Mr. T. Pridgin Teale, in 1884. The patient was a male, 54 years of age, who had been ill for three months, and the earlier history of the case was very obscure. Later it was believed that there was fluid in the right pleural cavity, and, after consultation, the thorax was punctured low down with the small trocar of Bartlett's applicator, but only 2 drachms of fluid, which was clear and straw-colored, could be obtained with the suction of the aspirator. Being still confident that fluid was present, Mr. Teale made a fresh puncture higher up, when very offensive, thin, greenish pus appeared; and after careful and continuous aspiration about a pint of pus was withdrawn. A fortnight afterward, the patient in the meanwhile having become more hectic and grown generally worse, an incision was made at the site of puncture, and the pleura opened. No pus appeared (only a small quantity of serum), and the lung felt dense and boggy, instead of crepitant and elastic. On introducing the trocar and puncturing the lung, pus appeared. The puncture was then enlarged so as to admit the finger, and 2 pints of exceedingly fetid pus escaped, after which a drainage tube was inserted, and the cavity syringed out with a weak solution of carbolic acid. The after-progress of the case was extremely critical and tedious, but the patient finally made a good recovery.

Simple abscess of the lungs, although, as had been stated, comparatively rare, Dr. Jones believed to be more frequent than was generally supposed; and in the future he thought it would be more easy to recognize than formerly, since Koch's brilliant discovery of the bacillus tuberculosis now enabled us to make a differential diagnosis. The main point when an abscess had manifested itself was to decide between tubercular and simple abscess, and while great rapidity in the development of the symptoms was always a point in favor of simple abscess, the real test was to be found in the microscope. Including the three cases narrated in the present paper, and exclusive of Graves' six cases, all of which recovered, there were now on record thirty well authenticated cases; and of these sixteen had been operated on, and fourteen had not. If in any case an operation was decided upon, free incision was no doubt the best procedure. He would only operate, however, when the indications for surgical interference were clear.

The chairman, Dr. Page, in some remarks on the paper, referred to pulmonary abscess resulting from the presence of foreign bodies, and said that he had seen a case in which an abscess developed on account of the presence of a bullet which had entered the lung tissue twenty years before; the patient having been wounded in one of the battles during the late war. He was thought to have a cavity, and was troubled with cough and hæmorrhage. The case resulted fatally, and at the autopsy an abscess with the bullet in it was found. Reynolds related a similar case in an old Waterloo soldier, where the bullet remained in the lung forty years before the abscess developed.

Dr. Alfred L. Loomis said that the paper, with its three original cases, and its records of other cases, constituted a valuable contribution to the somewhat meagre literature of this subject. In his own experience simple abscess of the lung was very rare. He had, however, seen a very few cases which were regarded, and very properly, he thought, of this nature, and in one or two instances the diagnosis was proved by post-mortem examination. In all cases of abscess, so far as his knowledge went, the condition had been preceded by the signs of inflammation, more or less active; and he believed that such abscesses formed in lungs which had been previously the seat of fibrinous pneumonia followed by an increase of connective tissue. When subjected to a not very active chronic inflammation abscesses were liable to form in this tissue. Such abscesses he had also never met with except in alcoholic subjects. It was, in his opinion, very difficult to draw the line between circumscribed empyema in certain positions and abscess of the lung, and especially if such empyema broke into the bronchial tubes, so as to allow of the escape of pus. In any case of his own he should be very loath to pass a knife into the lung tissue, and he fancied that the necessity for such a procedure was very rare. As a rule, it diminished the chances of the patient's recovery, and it was better to leave the abscess to open spontaneously.

Before the Section adjourned Dr. Leszynsky exhibited a little girl 9 or 10 years of age in whom the internal use of arsenic, in the form of Fowler's solution, given for the relief of chorea, had produced very marked pigmentation over the entire surface of the body. There was no reason to suspect the presence of Addison's disease, he said, and the case seemed to him a most remarkable one. As to the prognosis, as regards the permanency of the pigmentation, he was unable to express any opinion. If the weak sisters who are now addicted to the use of the "arsenic wafers" so widely advertised for the complexion could once have the opportunity of inspecting this unfortunate patient, it is safe to say that all demand for such preparations in the community would instantaneously cease. P. B. P.

Neglect of Clinical Teaching.

Dear Sir:—Allow me to make one remark on the question of bed-side teaching, with which you dealt so fully and so well in your editorial of the 9th inst. The difficulty lies entirely in the short three-session course. The students, teachers and patients are here, and there is no reason whatever why Philadelphia, New York, Boston, Baltimore, Chicago, St. Louis and Cincinnati should not have clinical teaching just as thorough, and just as systematic as is given to-day in Edinburgh, or on this continent, in Montreal. Large classes, in large cities with ample hospital facilities, can be perfectly well managed. The lack of a fourth year is the only obstacle. Yours truly,

WM. OSLER, M.D.

1502 Walnut St., Philadelphia, Pa.

BOOK REVIEWS.

DICTIONARY OF VOLAPÜK: Volapük-English; English-Volapük. By M. W. Wood, M.D., Captain and Assistant-Surgeon, United States Army, 8vo, pp. vi, 398. New York: Charles E. Sprague. London: Trübner & Co. 1889.

Volapük, it is said has obtained practical recognition among the speakers of twenty-one different tongues; the speakers of this new language are now numbered by hundreds of thousands, and some "natural" languages can claim no more. It seems not unlikely that Volapük will continue to grow in use for a few years; whether it will after a few years, be more, or less used, it is difficult to say. This may be said, however: no living language appears to present so many advantages for universal use, at present, as Volapük. The *plekels Volapüka*—devotees of Volapük, have been accused of wishing to have Volapük supersede living languages; such is not the case, however. The language is intended as a means of ready communication between persons not conversant with the mother-tongues of one another.

What figure will Volapük cut in the medical literature of the next few years? Some medical articles have been written in this language. At present, however, the medical terms are very few. Possibly in the near future some *sanelik Volapükan*—medical volapükist—will think out substitutes for such terms as hysterorrhaphy, staphylococcus pyogenes aureus, gastro-duodenitis, etc., and we are sure that our German confrères will hail with delight short substitutes for *Bauchspeicheldrüsenschwindsucht* and *Bauchspeicheldrüsenzwölffingerdarmpulsader*, not to mention other words of similar length. In fact, the more simple Volapük term might, we suppose, be adopted for general use in the living language. There ap-

pear to be no special difficulties in learning to read Volapük, nor in acquiring the ability to speak it.

Professor Henry Cohn, Director of the Chicago School of Languages, informs us that this is the most complete and the most conveniently arranged dictionary of Volapük published in any language.

TEXT-BOOK OF MEDICAL JURISPRUDENCE AND TOXICOLOGY. By JOHN J. REESE, M.D., Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania, etc. Second Edition. Revised and Enlarged. Philadelphia: P. Blakiston, Son & Co. 1889.

The first edition of this valuable and convenient work has become well-known to the profession, and consequently needs no extended notice. In this second edition the author has added valuable matter regarding Blood Stains, Suffocation, Ptomaines and Malpractice, and revised the text generally. It is well adapted as a text-book for students of both law and medicine.

TRANSACTIONS OF THE THIRTY-EIGHTH ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY, held in Rock Island, May 15, 16, and 17, 1888. 8vo, pp. xii, 220. Chicago: Jameson & Morse Company.

We must first apologize to the Illinois State Medical Society for having allowed its volume of Transactions to be so long unnoticed in THE JOURNAL; the volume appeared in September.

A large portion of this volume is devoted to the reports of committees on the progress made in the various departments and branches of medicine during the year. May it not be said that the day, when such reports are useful or in any way necessary, is past? The custom of having these reports was inaugurated in the Illinois State Medical Society 38 years ago. "Then," as Dr. A. Reeves Jackson remarks in his report on gynecology, "a doctor could wait for his quarterly installment of literary food without feeling any lack of nutrition. . . . Then came the monthly. . . . But now the quarterlies are changing to monthlies, the monthlies to weeklies, and every physician is a subscriber. . . . So that these yearly reports, which may at the first have been a welcomed offering to those who had not always the opportunity of obtaining otherwise the facts which they might contain, have come to be less and less useful."

The volume closes with a volunteer paper by Dr. E. Fletcher Ingals on "Chronic Rheumatic Laryngitis or Chronic Rheumatic Sore Throat," which has been published elsewhere; one by Dr. J. W. Cowden, of Rock Island, on "The External Application of Sulphur in Sciatic Neuralgia," which has been published in THE JOURNAL (Vol. xi, p. 13), and one by Dr. David Prince, of Jacksonville, on "The Possibilities of Volapük for a Universal Language in Relation to Medical Science."

THE YEAR-BOOK OF TREATMENT FOR 1889. Being a Critical Review of the Practice of Medicine and Surgery during 1888. 8vo, pp. viii, 344. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co.

In this book is furnished not only an account of the more important advances made in the treatment of disease, but also a review of these advances by competent authorities. The contributions include abstracts and excerpts from the medical literature of all countries for the year ending September 30, 1888. The list of editors includes some of the best-known men in the profession in England. The volume is very conveniently arranged, and the contents make it a most admirable book for any physician.

DEPARTMENT OF AGRICULTURE. Report of 1887. Swine-plague and Cholera critically considered. By FRANK S. BILLINGS, Director of the Patho-Biological Laboratory of the State University of Nebraska. Pamphlet, pp. 64. Lincoln, Neb. State Journal Company. 1889.

This is a "review" of Mr. D. E. Salmon's report on Swine-plague and Cholera, made to the Department of Agriculture in 1887. Dr. Billings says in his preface: "The absolute necessity of forcing this dispute to a final issue must be my excuse for this contribution." What the dispute is, we have failed to discover from the 64 pages of the pamphlet. It is absolutely painful to read anything written with so little dignity of style as this pamphlet, especially when it emanates from a member of the medical profession occupying a public position. The pamphlet is not argumentative; it is abusive, rhetorically involved, and unclear in diction and style. The author claims in his preface to be the devoted servant of his profession, the live stock interests of his country, and his race in all countries. With these masters to serve we think he could spend his time to better advantage than in writing pamphlets of this nature.

MISCELLANY.

MICHIGAN STATE MEDICAL SOCIETY, *Twenty-fourth Annual Meeting*, to be held at Kalamazoo, Michigan, May 9th and 10th, 1889. Much satisfaction is felt in announcing that the membership of the Society is rapidly growing, that added interest in its work is displayed from year to year, and that the regular attendance upon its meetings is constantly increasing. Its members, actuated

by a truly scientific spirit, are working together harmoniously to further the welfare of the Society. The division into Sections for the reading and discussion of papers has greatly facilitated its work. Ours is the first State Society to adopt this plan. Stenographers have been furnished each Section, and verbatim reports of discussions taken. The recent volumes of *Transactions* tell of the gratifying amount of work accomplished. A similar arrangement will be carried out at the next meeting. Mornings will be devoted to the general business meetings of the Society, afternoons to work in the Sections. In addition to the Annual Address of the President, others are promised from the Orators of Sections, as follows:

Upon Practice of Medicine.—Henry F. Lyster, M.D., Detroit. Subject: "The Influence of Mind in the Cure of Disease."

Upon Surgery.—Herman Keifer, M.D., Detroit. Subject: "Surgery within the last Fifty Years."

Upon Obstetrics and Gynecology.—E. W. Jenks, M.D., Detroit. Subject: "The Education of Girls from a Medical Standpoint."

Committees of the different Sections urgently desire that members further the work of the Society by contributing brief papers. Those presented must be fully completed, that the publication of the *Transactions* may not be retarded. Complete abstracts and titles should reach the Secretaries of the Sections not later than April 20th, to insure notice in the official programme.

Railroad certificates for reduced fare will be sent to all physicians, other than members, who desire them, on application to the Secretary.

The Headquarters of the Society will be at the Burdick House, Kalamazoo. All sessions of the Society will be held in the 1st Presbyterian Church, corner of Rose and South streets.

The officers of the Society earnestly solicit the coöperation of all members, to the end that the next meeting at Kalamazoo may prove the largest and most successful in the history of the Society.

Secretaries of Sections.—Practice of Medicine: H. B. Hemenway, M.D., 524 South Park St., Kalamazoo. Surgery: F. W. Mann, M.D., 250 West Fort St., Detroit. Obstetrics and Gynecology: C. Henri Leonard, M.D., 18 John R. St., Detroit.

To be elected to membership necessitates being present.

S. S. French, M.D., President,
Battle Creek.

Geo. Duffield, M.D., Secretary,
25 Washington Ave., Detroit.

Dr. Paschal Maxfield, the oldest physician in Vergennes, Vermont, died recently, aged 76. He was highly esteemed for his generous character, and held many important offices in the gift of the town and State. He was a graduate of Castleton Medical College.

An American Hospital is one of the features of the City of Mexico. All English-speaking persons that apply are admitted. Regular contributors to the Hospital, who subscribe not less than $1 monthly, and Americans without means of support, are entitled to attendance and medical treatment in the general ward, free of all charge. Other persons may enjoy the privileges of the Hospital on equitable terms, and private rooms are provided for such as desire them.

History of the Medical Profession in Canada.—The descendants of the early doctors of Upper Canada will be interested to learn that there is being prepared an historical account of those pioneer practitioners, by Dr. Canniff, of Toronto, the author of "The Settlement of Upper Canada." The work will give an account of the several steps in legislation to secure a proper standing of the profession from the establishment of the Province of Upper Canada up to about the year 1850; 2d, an account of the proceedings of the Upper Canada Medical Board; 3d, a list of the medical men during that period, with biographical sketches. Dr. Canniff requests veteran medical men to kindly furnish him at once with information on the following points: 1, birthplace and date; 2, place of medical study and the degrees; 3, time of arrival in Canada; 4, places where he practiced; 5, incidents in his professional life; 6, marriage, children, and death.

Chicago Policlinic.—Dr. W. A. D. Montgomery has been elected Professor of Diseases of Children; Dr. M. L. Harris, Professor of Surgery; and Dr. Henry Hooper, Professor of Gynecology.

Medical Graduates.—Following are the numbers of graduates from schools that have recently closed the session of 1888–89: Baltimore Medical College, 21; Starling Medical College, 28; University of Nashville and Vanderbilt University, 98.

Medical Education.—At the annual meeting of the Board of Trustees of the Central College of Physicians and Surgeons of Indianapolis, held March 1, 1889, the following resolution which had previously been passed by the stockholders and faculty, received the unanimous vote of the members:

"That after the session of 1890 and 1891, the Central College of Physicians, and surgeons require of each student who is a candidate for graduation, evidence of four years' study of medicine, and the attendance of three ourses of lectures."

The Anniston City (Ala.) Medical Society met and organized on February 23, with Dr. H. Mabbett as President, and Dr. Bowcock as Secretary.

Proposed Hospital for Inebriates in Massachusetts.—A bill has been introduced into the Massachusetts Legislature providing for the establishment of a hospital for inebriates. This indicates a new development of knowledge and experience in regard to the treatment of habitual drunkards. Dipsomania is now distinctly recognized as a disease. The patient may have been culpable in inducing it; but, when it is once acquired, it cannot be expelled without the proper treatment. This treatment must be based on sound medical and moral principles. The fact that dipsomania is a disease is already conceded in the laws of the State which provide for the commitment of such persons to the insane asylums. But experience has shown that, while the law is right in recognizing the disease, its disposition of the victim is not fortunate or adequate. A large amount of testimony can easily be gathered from superintendents of insane hospitals to show that such institutions are not proper places for the commitment of dipsomaniacs or habitual drunkards. At the end of a few weeks, when the paroxysm of inebriety has passed away, the patient is apparently well. He is at least no longer insane in any proper sense. It is not difficult to procure an early discharge; and the patient goes forth only to renew his debauch at the usual interval, and is perhaps recommitted to the asylum. What he really needs is to be treated, not for insanity, but for drunkenness. The methods of treatment are not identical. An habitual drunkard needs to be restrained long enough to establish the physiological changes necessary to a permanent cure. He needs also to be brought under the constant pressure of moral influences which shall develop and strengthen the power of self-control.

Nor is a prison any more than the insane asylum the proper place to commit habitual drunkards who are not criminals. The drunkard who commits a crime against society while under the influence of liquor becomes amenable to the criminal law. The drunkard who has not in other respects a bad repute, but yields to the dominion of this form of self-indulgence, belongs to a different class. In both cases the aim of society should

be the same—the reformation of the victim. But the proper classification may lead to a distinction between them. The time will come, we trust, when all prisons will be regarded as moral hospitals. But that time has not yet arrived. A prison is still popularly regarded as a place for the infliction of punishment. Incarceration carries with it the stigma of criminality. There are those who feel that the drunkard or the opium-eater, who is simply guilty of a sin against himself, should not be placed in prison with those who are guilty of sins against society. We do not think this reasoning should be pushed too far. We believe that every man who yields to self indulgence violates not merely his obligations to himself, but obligations to society and posterity. And it may be shown that the drunkard who bequeaths the terrible consequences of his indulgence to his children has done vastly more harm by his life in the world than the man who steals a few dollars from his neighbor and is branded as a thief.

It is not necessary here, however, to press points of casuistry. We simply urge that this matter be approached in a practical way. It is a simple fact that a large percentage of inebriates may be cured if placed under proper conditions. These facts are amply supported by the testimony of medical men and of experienced temperance workers. It is further reinforced by the statistics of the most successful private inebriate asylums. But such asylums are not available to many of the poor, nor can they command those conditions which may be provided by State Institutions. The difficulty in private institutions is that the patient wishes to decide for himself when his cure is completed. His judgment does not agree with the judgment of his physician, but the latter has no power to restrain him. The bill before the Massachusetts Legislature grants a power of restraint over the patient extending to 2 years. It provides for the commitment of the inebriate under proper legal form and on sufficient medical evidence. It also protects the inmate against the possibility of unjust detention; and, should it became a law, as we trust it may, those inebriates who are now sent to insane asylums and many that are sent to reformatories would be committed to its care. The bill has been carefully drawn by medical and legal experts, and Massachusetts now has an opportunity of trying an experiment which ought not to be longer delayed. Every step in the classification of disease and crime is a step in advance. The new institution, if established according to this bill, will not be a prison or an asylum—it will be a hospital. Here the patient may be surrounded by every needed influence, physical and moral, until he has outgrown the disease which has mastered him.—*St. Louis Globe-Democrat.*

LETTERS RECEIVED.

F. P. Allen, S. H. Gardner, J. H. Frey, University of Virginia; Orion K. Thompson, Greenburg, Ind.; A. G. Patton, Cherry Fork, O.; Dr. E. A. Christian, Pontiac, Mich.; Dr. Kent K. Wheelock, Fort Wayne, Ind.; Dr. C. A. Rogers, Bakersfield, Cal.; Dr. A. L. Hummel, Philadelphia; Dr. A. F. A. King, Dr. H. H. Barker, Washington, D. C.; Dr. John S. Lewis, Dubuque, Ia.; Newport Aluminum & Steel Co., Newport, Ky.; J. S. Winters, Louisville, Ky.; E. M. Thomas Mfg. Co., New York; Dr. H. T. Montgomery, South Bend, Ind.; J. C. Cochran, Burlington, Vt.; Dr. R. J. Dunglison, Philadelphia; Dr. M. J. Dudley, Sonoraville, Ga.; Dr. J. A. Irwin, Philadelphia, Pa.; Dr. D. DuPre, Dallas, Tex.; Dr. C. A. Freeman, Leland, Ill.; Jerome Kidder Mfg. Co., New York; Dr. C. H. Bradley, Haverhill, Mass.; W. A. Caldwell, Washington, D. C.; Reed & Carnrick, New York; Dr. Wm. C. Woodward, Washington, D. C.; Dr. F. E. Young, Canton, O.; Dr. A. A. Hoehling, U. S. Navy; W. S. Mobbitt, Louisville, Ky.; Henry Bernd & Co., St. Louis, Mo.; Dr. T. E. McArdle, Washington, D. C.; Dr. N. Senn, Milwaukee, Wis.; New York & Chicago Chemical Co., New York; J. F. Widman, McGregor, Ia.; A. M. Eagon, New York; St. Hilde's School, Morristown, N. J.; Walters Bros., Des Moines, Ia.; S. A. Majure, High Hill, Miss.; Adda Dixon, Omaha, Neb.; W. A. Lee, Chicago, Ill.; Dr. J. S. Marshall, Green Spring, O.; Dr. J. W. Thompson, St. Paul, Minn.; Chicago Policlinic; Dr. H. A. Kelso, Paxton, Ill.; Dr. J. R. Kewley, Chicago; Cincinnati Polyclinic; Dr. H. Longstreet Taylor, Cincinnati; Dr. E. R. Smith, Toledo, Ia.; Dr. S. Solis-Cohen, Philadelphia; Dr. H. R. Storer, Newport, R. I.; Western Publishing House, Chicago; H. Weinhagen, New York; Thos. F. Goode, Buffalo Lithia Springs, Va.; Dr. J. Chris. Lange, Pittsburgh, Pa.; J. H. Johnson, Burgwash, N. S.; Dr. E. R. Fletcher, St. Paul, Neb.; Subscription News Co., Chicago; McIntire & Ashby, Baltimore, Md.; Dr. Sauerhering, New York; Dr. Geo. Duffield, Detroit, Mich.; Dr. Wm. Osler, Philadelphia; Dr. G. A. Ritchie, Manawa, Wis.; M. G. Conger, Cincinnati, O.; Medical Library Association, New Orleans, La.; Heap's Patent Earth Closet Co., Muskegon, Mich.; Dr. G. C. Smythe, Greencastle, Ind.; Eastman Dry Plate & Film Co., Rochester, N. Y.; O. W. McMichael, Buffalo, N. Y.; Dr. H. J. Wood, Brooklyn, N. Y.; Dr. G. F. Cook, Oxford, O.; Adams Nervine Asylum, Jamaica Plains, Mass.; Dr. Louis A. Kengle, San Francisco, Cal.; Dr. Benno Schwabe, Basle, Switzerland; Otto Maier, New York; V. J. Stearns, J. P. Olsen, R. I. Clayson, M. A. Cachot, San Francisco, Cal.; John A. Barrett Battery Co., Baltimore, Md.; Dr. J. H. Goss, Fort Lamar, Ga.; R. C. Boyle, Winnipeg, Man.; Ella Camp, Clarence, Ia.; J. H. Bates, New York; Health Restorative Co., New York; Woman's Medical College, Kingston, Canada; Dr. E. P. Brewer, Norwich, Conn.; E. B. Owens, Chicago; Dr. R. Harvey Reed, Mansfield, O.; Edmond Gros, San Francisco, Cal.; Dr. J. C. Reeve, Dayton, O.; Dr. G. A. Dixon, New York.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from March 9, 1889, to March 15, 1889.

By direction of the Secretary of War, Col. Jedediah H. Baxter, chief Medical Purveyor, will proceed to New York City on public business connected with the Medical Department, and on completion thereof return to his station in this city. Par. 18, S. O. 57, A. G. O., Washington, March 11, 1889.

Major Charles R. Greenleaf, Surgeon U. S. Army, is appointed member of board to meet in this city on March 11, 1889, for the purpose of revising the blank forms, now in use in the Army, and preparing the "Book of Forms" for issue. Par. 13, S. O. 55, A. G. O., Washington, March 8, 1889.

By direction of the Secretary of War, Capt. Richard W. Johnson, Asst. Surgeon, is relieved from duty at San Carlos, Ariz., and will report in person to the commanding officer, Whipple Bks., Ariz., for duty at that station. Par. 15, S. O. 57, A. G. O., Washington, March 11, 1889.

By direction of the Secretary of War, Capt. Robert W. Shufeldt, Asst. Surgeon, having been found incapacitated for active service by an Army Retiring Board, is granted leave of absence until further orders on account of disability. Par. 7, S. O. 56, A. G. O., Washington, March 9, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending March 16, 1889.

Asst. Surgeon Frederick A. Hesler, detached from Naval Hospital, New York, and ordered for examination preliminary to promotion.

Asst. Surgeon Frederick N. Ogden, ordered to receiving ship "St. Louis," Navy Yard, League Island.

Asst. Surgeon Patrick H. Bryant, detached from receiving ship "St. Louis" and to the Naval Hospital, Chelsea, Mass.